

Safer Sex

Daniel J. O'Shea

Contrary to a popular myth, sexual desire does not wane after the age of 50; most older adults continue to be sexually active, enjoying close personal and sexual relationships with a partner. A 1998 National Council on Aging survey of 1,300 seniors found that half were having sex at least once a month, and nearly 40% wanted more. Masters and Johnson cited significant physiological and psychological value in continuing sexual activity among older adults. Every person has normal desires to be loved, touched, and have sexual relations. While the sex drive may diminish in some with aging and chronic disease, it remains an important part of life. Among older males, impotence or "erectile dysfunction," the inability to sustain an erection sufficient for sexual intercourse, can now be treated through pharmacotherapy.

More and more people in their sixties and seventies, living longer and healthier, are newly single through divorce from, or death of, their partners, and are once more dating, beginning new relationships, and participating in some kind of sexual activity. Others may be in monogamous relationships with a partner who engages in risky behavior without their knowledge. Unfortunately, knowledge of the risk of unprotected sex and safer-sex practices among older adults is much less than that of sexually active persons in their late teens and early twenties. This circumstance can place unwary older adults at risk of acquiring deadly diseases like HIV and hepatitis as well as other sexually transmitted diseases.

The older generation has never been targeted for sex education with the exception of Viagra, or identified as a risk group; many geriatric doctors are not even looking for HIV among their patients. Older adults and their health care providers rarely discuss sexual behaviors, given the stigma that society attaches to risky behaviors and HIV. This is particularly dangerous as HIV-related illnesses can be difficult to distinguish from typical age-related health problems. Older adults typically believe that HIV only affects younger people and that they are free to engage in unprotected heterosexual (now without worry of pregnancy) or homosexual sex.

Sexual activity is the most common cause of HIV infection in older adults. One study found that people over 50 are only one-sixth as likely to use condoms and

one-fifth as likely to get tested for HIV as those in their twenties. Once exposed to HIV, older women may also be more vulnerable to infection due to physical changes with menopause. Vaginal walls become dry and thin, and can lead to abrasions and tears, increasing risk of infection with unprotected sex.

Safer sex activities Before becoming sexually intimate, older adults should consult their doctor about the risks of acquiring HIV or other sexually transmitted diseases, and also talk frankly about this with their partners. Most sexual activity carries some risk, which can be reduced by making it more difficult for your partner's blood or sexual fluid to enter your body. The risk is minimized by "safer sex" practices. Following are a combination of guidelines offered by the New Mexico AIDS Education and Training Center, the Centers for Disease Control and Prevention (CDC), and the National Institute on Aging.

1. Assume that your sex partners are infected with HIV. You cannot tell by appearance if people are infected, and he or she may be lying or unaware that he or she is positive. Some were infected by steady partners who were unfaithful "just once." Even those testing negative might have been infected after being tested, or may have taken the test too soon after exposure to HIV.
2. Engage in activities that have no risk for spreading of HIV, avoiding contact with your partner's blood or sexual fluids. These include abstinence (never having vaginal, anal, or oral sex), fantasy, masturbation, sexy talk, and nonsexual massages.
3. If you do engage in vaginal, anal, or oral sex (a) be aware of your body and that of your partner's. Cuts, sores, or bleeding gums, rough physical activity, and even small injuries increase the risk of HIV. (b) Have intercourse with only one partner. Sex with just one partner is safe as long as neither of you is infected and if neither of you ever has sex or shares needles with anyone else. (c) Make sure you and your partner have been tested and are free of HIV. Get tested if you or your partner had a blood transfusion before 1986, or had an operation or blood transfusion in a developing country at any time. (d) Use a barrier to prevent contact with blood or sexual fluid during intercourse: male or female condoms (latex or polyurethane). Although skin is also a natural barrier, in rare cases HIV can get into the body through healthy mucous

membranes, with risk of infection much higher if the membranes are damaged. (e) Lubricants can increase sexual stimulation and reduce the chance that condoms or other barriers will break, but use only water-based lubricants; oil-based products like Vaseline, oils, or creams can damage condoms and other latex barriers. (f) Know what you are doing: be aware that using any alcohol or drugs before or during sex can impair judgment and greatly increase chances of not following safer sex guidelines. (g) Before you have sex, think about safer sex, set your limits and stick to them: decide how much risk you are willing to take, how much protection you want to use during different sexual activities, making sure you have adequate supplies where they are easy to find, and talk to your partners so they know your limits.

Oral sex has some risk of transmitting HIV, especially if there are bleeding gums or sores in the mouth. Condoms without lubricants work best for oral sex; pieces of latex or plastic wrap over the vagina can also be used as barriers.

If both people are already infected Although some do not see the need to follow safer sex guidelines when both partners are already infected, there is a possibility of exposure to other sexually transmitted infections such as herpes or syphilis, which can have more serious consequences for people with HIV. Potential “re-infection” with a different strain of HIV might result in resistance to some anti-HIV drugs. Following safer sex guidelines reduces these risks.

Related Topics

- [Acquired Immunodeficiency Syndrome \(AIDS\)](#)
- [Sexually transmitted diseases](#)

Suggested Resources

The AIDS InfoNet, New Mexico AIDS Education and Training Center, University of New Mexico School of Medicine: Safer Sex Guidelines (2005) Albuquerque, NM (August 18, 2005); <http://www.aidsinfonet.org/articles.php?articleID=151>

Centers for Disease Control and Prevention (2005) Frequently asked questions on HIV and AIDS. Atlanta, GA (October 15, 2005); <http://www.cdc.gov/hiv/pubs/faqs.htm>

Krales E (2004) Is it AIDS or is it Aging? Considerations for aging with HIV. Body Positive (online). December 2004; <http://www.thebody.com/bp/dec04/aging.html>

National Institute on Aging Age Page HIV, AIDS, and Older People (2004) Gaithersburg, MD (June 2004); <http://www.niapublications.org/engagepages/aids.asp>

Shippy A (2004) HIV and aging ACRIA (AIDS Community Research Initiative of America) Update (online). 13(3); http://www.acria.org/treatment/treatment_edu_summerupdate2004_aging.html

Schizophrenia

Deborah J. Gould

Schizophrenia is a disorder of the brain that affects approximately 1% of the world's population, occurring equally in men and women and in all ethnicities. The three types of clinical symptoms found in schizophrenia are called positive symptoms, negative symptoms, and cognitive symptoms. The positive symptoms include hallucinations (seeing, hearing, smelling, or feeling things that do not exist), delusions (false beliefs that cannot be changed by factual knowledge), and disorganized, illogical thinking. The most common type of hallucination is auditory. Negative symptoms include apathy (lack of interest in life), social withdrawal, and minimal or inappropriate emotional responsiveness. These types of symptoms make it difficult for people with schizophrenia to interact with others and feel comfortable in social situations. Cognitive symptoms include decreased attention and concentration, decreased working memory, and decreased executive functioning (the ability to plan activities and carry them out in an organized manner). The cognitive symptoms can interfere with an individual's ability to work or study effectively.

Schizophrenia typically presents in late adolescence or early adulthood. The average age of onset is 18 years for men and 25 years for women. There is often a prodromal period of several months during which florid psychosis is absent but behavioral changes such as social isolation and amotivation have begun. The course of schizophrenia can be quite variable. Some individuals have remitting and relapsing illness with periods of high functioning between episodes. Some individuals are chronically symptomatic despite treatment. There is evidence to suggest that if

treatment is begun during the prodromal phase, the outcome is improved.

Although schizophrenia usually develops at a young age, the exception to this is an entity called “late-onset schizophrenia.” By definition, this type of schizophrenia begins after the age of 45. In individuals who require hospitalization for schizophrenia, 13% have the onset of symptoms in their fifties, 7% in their sixties, and 3% in their seventies or later. The most common symptoms are hallucinations and delusions, whereas negative symptoms are infrequent. This form of schizophrenia may be etiologically different from that which affects younger people, although the treatment is the same.

The cause of schizophrenia is unknown. Current research at the National Institute of Mental Health (NIMH) focuses on neurodevelopmental, genetic, and environmental factors. The neurodevelopmental hypothesis of schizophrenia proposes that the brains of individuals with schizophrenia begin to develop abnormally before birth. Whether this abnormal development is due to genetic or environmental causes is unknown.

Twin studies of schizophrenia have indicated that there is a genetic component in schizophrenia, but even in identical twins the concordance rate (both twins affected) is only 40–65%. The genetic contribution to schizophrenia is probably related to a number of different genes on several different chromosomes. Some of these genes are thought to encode for enzymes involved in the metabolism of neurotransmitters such as dopamine and glutamate, which have been implicated in the pathogenesis of schizophrenia for a long time. Other genes may be involved with the development of the nervous system, including neuronal pathways in the brain.

Environmental factors may contribute to the development of schizophrenia if the genetic predisposition for the illness is already present. Some of these factors include pollution, toxins, malnutrition, and emigration to another country. Other environmental factors may contribute directly to the development of schizophrenia for reasons that have not yet been elucidated. For instance, mothers who have influenza during the first trimester of pregnancy have a sevenfold increased risk of bearing a child who will develop schizophrenia. Mothers with toxoplasmosis, a parasitic infection, also have an increased risk of having a child with schizophrenia. Whether the increased risk is related to a direct effect of the pathogen on the fetus or to the

effect of the mother’s immune response to the pathogen is unknown.

Whatever the cause or causes of schizophrenia are found to be, there are treatments available currently that address the symptoms of schizophrenia. Antipsychotic medications can help the positive and negative symptoms of schizophrenia. In general, these medications work by blocking receptors to certain neurotransmitters in the brain that are believed to be responsible for the symptoms seen in schizophrenia. The dopamine hypothesis of schizophrenia attributes schizophrenia to excess dopamine in the brain. The first antipsychotics developed to treat schizophrenia block dopamine receptors. These conventional antipsychotics have neurological side effects such as Parkinsonism and dystonias that occur because of the dopamine blockade. Tardive dyskinesia, another type of movement disorder presumably caused by decreased dopamine activity in the brain, can occur years after the initiation of conventional antipsychotic therapy and has no known treatment.

The newer antipsychotic medications are called atypical antipsychotics. They target different dopamine and serotonin receptors than do the conventional antipsychotics and have fewer neurological side effects. In addition, they may be superior to the conventional antipsychotics in treating the negative symptoms of schizophrenia. Unfortunately, potentially serious side-effects of the atypical antipsychotics have now been found. This group of medications appears to affect glucose and lipid metabolism and can lead to the development of diabetes mellitus and hyperlipidemia (elevated blood lipids or fats). In addition, their use in older people with vascular dementia (dementia due to stroke activity) has been implicated in fatalities due to cardiovascular events or infection. As with the use of all medications, the benefit of the treatment has to be weighed against the risk.

Because schizophrenia usually begins at a young age and has symptoms that affect cognition, emotions, and perception, the cost in terms of human suffering and dollars is high. In the United States, more than 3 million people have schizophrenia. Of these, 5% are homeless and constitute approximately 30% of the homeless population. Only 28% of people diagnosed with schizophrenia live independently, whereas 6% live in hospitals, 10% live in nursing homes, and 25% live with family members. In 2002, more than \$62 billion was spent on care for schizophrenia in the United States. Direct health care costs were more than \$22 billion. Direct nonhealth

costs, such as homeless shelters and research costs, were more than \$7 billion. Indirect costs, which include unemployment and decreased work productivity, were more than \$32 billion.

In summary, schizophrenia is a chronic, debilitating disorder of the brain that has an immense impact on individuals, their families, and society as a whole. The National Institute of Mental Health continues to search for causes of the illness. Further work needs to be done to find safe and effective medications. Finally, social issues such as stigma and funding need to be addressed to ensure that individuals with chronic mental disorders receive appropriate ongoing care.

Related Topics

- Homelessness, ➤ Medication management, ➤ Mental illness, ➤ Parkinson's Disease

Suggested Readings

- Stahl SM (1999) Psychopharmacology of antipsychotics. Martin Dunitz Ltd., London
 Wu EQ, Birnbaum HG, Shi L et al (2005) The economic burden of schizophrenia in the United States in 2002. J Clin Psychiatry 66(9):1122–1129

Suggested Resources

- The American Academy of Family Physicians February 2002 HealthyPlace.com Thought Disorders Community; <http://www.healthypplace.com>
 National Institute of Mental Health Schizophrenia Review of research on and epidemiology of schizophrenia Revised 2005; <http://www.nimh.nih.gov>

Scleroderma

Lori B. Siegel

Scleroderma is a generalized disorder in which there is excess deposition of fibrous or scar tissue in the connective tissues that can affect the skin and internal

organs. This condition occurs more commonly in women and the typical onset may be between the ages of 45 and 65. Scleroderma encompasses a wide spectrum of conditions, some that progress rapidly, and some that progress more slowly. Often times the symptoms evolve over time and the official diagnosis may only be determined over months to years of observation. The disease may be quite disfiguring and life threatening or quite mild, depending on the degree and distribution of vasculopathy (disease of the tissue). The terminal arteries of the circulatory system are affected and result in vascular insufficiency to the end organ or target tissue. All organs are involved at some level or degree.

Scleroderma is divided into two major clinical groups that affect or predict severity and prognosis. Limited systemic sclerosis (LSS), or CREST, has a more benign prognosis and slower course. Progressive systemic sclerosis (PSS) progresses more rapidly and has a more malignant presentation. Although there is some overlap, and one may evolve into the other, careful history and physical examination along with selected laboratory testing should help make the distinction.

LSS is also called CREST because patients may have calcinosis, Raynaud's phenomenon, esophageal dysmotility, sclerodactyly, and telangiectasia. Again, all of these may rarely be present at once, or they may occur over time. The calcinosis is actually calcium deposition in the soft tissues and muscles. It is idiopathic and independent of serum calcium levels or calcium ingestion. There is no treatment for this condition but the calcium deposits may be quite painful, and if large or affecting activities, may need to be surgically removed. If the deposits are superficial, they may break through the skin surface and become easily infected, so good skin hygiene is paramount.

The Raynaud's phenomenon is not unique to LSS and may occur in PSS as well as many connective tissue disorders. The classic changes in Raynaud's are an initial well-demarcated pallor (skin paleness), then cyanosis (reddy/bluish color of skin) and then upon revascularization, a deep red or mottled appearance of the fingers or toes. It should be noted that Raynaud's might affect the fingers and toes as well as the tip of the nose. Uncontrolled Raynaud's may lead to tissue loss. Treatment is aimed at avoidance of cold, using gloves, and local care to any lesions on the hands or feet. Calcium channel blockers, particularly nifedipine, promote vasodilatation. Also nitrates, used sparingly

because of side effects, may help in some situations. Esophageal dysmotility (diminished movement of muscles of esophagus/throat) also occurs in LSS due to relaxation of the lower esophageal sphincter (clenching muscle at the base of the esophagus/gullet) and this causes acid reflux. Caution must be used because the calcium channel blockers that treat the Raynaud's may exacerbate reflux.

Sclerodactyly (scarring and distortion) of the fingers or toes may occur as well but usually involves the areas below the knee and below the elbow. Involvement more proximal to these areas is seen in PSS. The sclerodactyly may present initially as puffiness before the fibrosis and hardening sets in. Treatment of this is symptomatic with nonsteroidal anti-inflammatory medications with close attention to renal function. Steroids should be avoided in this condition as they may actually worsen the disease state.

Telangiectasias are the final component of the CREST syndrome. These are flat, small reddened accumulations of blood vessels that may appear anywhere but are most common on the palmar surfaces of the hands, around the nails, around the mouth, and sometimes on the cheek mucosa. There is no specific treatment for these and the lesions do not cause any problems per se but are clues to the underlying vasculopathy. A very common presentation in LSS is that of Raynaud's phenomenon that is present years before the other clinical features appear. A more serious, but less common, manifestation of LSS is pulmonary (lung) hypertension without pulmonary fibrosis (scarring).

Patients who fall into the PSS category have more extensive skin disease that may involve the proximal limbs and trunk. These patients may present with Raynaud's but rapidly progress to significant major organ involvement. Rapidly progressive skin disease may lead to significant disability. The overall course of PSS is variable. Clinical features that herald a poorer prognosis are diffuse skin involvement, later age of disease onset, African American or Native American heritage, impaired diffusion capacity, blood or protein in the urine, anemia, high sedimentation rate (abnormal tests indicating acute or chronic effects), pericardial effusion (fluid around the heart), and anemia. These patients may develop contractures from skin tightening and subsequent disuse muscle atrophy. Lung impairment is a leading cause of mortality and is commonly from interstitial lung disease and vascular disease. The cardiac manifestations may be more subtle but patchy fibrosis

of the entire myocardium (heart muscle) may occur. There may be diastolic dysfunction, myocarditis, and cardiomyopathy (all types of disorders of heart muscle).

Gastrointestinal manifestations of PSS include wide mouth diverticulae (intestinal polyps) as well as dysmotility (abnormal movement) of the intestines due to fibrotic deposition. Bacteria may become entrapped and dissect through the bowel wall causing pneumatosis cystoids intestinalis (multiple gas-filled cysts of various sizes located in intestine), which may clinically mimic a ruptured bowel. Attempts at surgery should be avoided since there is no surgical solution for this and the wound healing is impaired in scleroderma and may become quite difficult to manage. Conservative therapy and bowel rest in the best course of action. As the skin disease affects the face, the mouth may be diminished and oral hygiene issues become problematic. In some cases the skin is so taut that the patient is unable to close the mouth and this results in dryness and ulceration. Malnutrition and malabsorption is also a problem as the intestine becomes less mobile. Fecal incontinence may also occur due to fibrosis of the rectal sphincter. Renal involvement in PSS is universal and the most severe clinical presentation is scleroderma renal crisis characterized by malignant hypertension (out of central elevated blood pressure) and rapidly progressive renal failure. Patients at risk for this may have a specific type of anemia, microangiopathic anemia, just before the onset of the crisis. Although this was formerly the clinical manifestation with high mortality, the early and prompt use of medications such as angiotensin-converting enzyme (ACE) inhibitors has helped to control this.

Treatment of PSS is difficult. Spontaneous improvement may occur. The use of medications such as penicillamine and chlorambucil has been helpful, although further studies have not supported their use. Methotrexate has also been used, but again larger clinical trials did not support it. The clinical effectiveness of medications that act on the immune system such as cyclosporine and interferons are underway. Although the above systemic treatments are still being used, attention to treatment of specific organ involvement seems best. Constipation is best treated with hydration and stool softeners with attention to increasing dietary fiber. Diarrhea should be treated carefully with antidiarrheal medications and antibiotics if due to bacterial overgrowth. The cardiopulmonary manifestations are best managed with the medications cyclophosphamide

or azathioprine combined with low dose prednisone (asteroid), especially in alveolitis (lung inflammation). Pulmonary hypertension can be treated with vasodilators. As mentioned earlier, ACE inhibitors are used for renal manifestations. Analgesics and careful use of non-steroidal anti-inflammatory medications can be used for the musculoskeletal pain.

Other disease states may mimic PSS and should be considered, because some of the other conditions might be more easily treated or managed. Some of the scleroderma-like conditions include localized scleroderma, thyroid disorders, or skin changes as a result of chemotherapeutic medications or toxin exposure.

Scleroderma encompasses a vast array of clinical presentations and each patient is unique. The treatment is essentially symptomatic and this debilitating disease is very difficult to treat. Research is ongoing and new treatments are emerging. It is important to recognize the symptoms early and educate the patient so they can avoid any complicating factors.

Related Topics

- ➊ Autoimmune disease disorders, ➋ Systemic lupus erythematosus

Suggested Readings

- Klippel JH (2001) Primer on rheumatic diseases, 12th edn. Arthritis Foundation, Atlanta, GA
 Klippel JH, Dieppe PA (1998) Rheumatology, 2nd ed. C.V. Mosby, St. Louis, MO
 Klippel JH, Dieppe PA, Ferri FF (2000) Primary care rheumatology. Harcourt, London

Self-Esteem

William J. Meyer

Self-esteem is one's sense of pride or self-respect. Self-esteem is often thought of in conjunction with adolescence due to the rapid changes in self-esteem that seem to accompany the preteen and teenage years. However,

an individual's sense of self-esteem remains throughout life and even continues to fluctuate especially in the elder years.

Typically self-esteem seems to rise gradually throughout childhood. Then, as an individual reaches adolescence, self-esteem levels seem to drop dramatically. This drop tends to be more drastic for females. Self-esteem then stabilizes and rises throughout the college years with self-esteem peaking in the late 60s. Then, as an individual ages through his or her seventies and eighties, self-esteem begins to decline again. This time the decline tends to be more drastic for males. The exact reasons for changes in self-esteem are unknown. However, there seem to be important changes that accompany the decline in one's self-esteem. The change in adolescence could very well be the onset of puberty, while the change in the elderly years could be a loss of physical capabilities coupled with events such as the loss of a spouse or partner and retirement.

There are numerous methods to try to increase self-esteem including associating with positive, supportive people, and engaging in consistent exercise. Social support and engagement in activities in which the individuals perceive themselves to be valued and appreciated can be important in maintaining self-esteem in older adults.

Related Topics

- ➊ Body image, ➋ Coping, ➌ Friendship, ➍ Generativity

Suggested Readings

- McAuley E, Elavsky S, Motl RW, Konopack JF, Hu L, Marquez DX (2005) Physical activity, self-efficacy, and self-esteem: Longitudinal relationships in older adults. *Journal of Gerontology: Psychological Sciences* 60B(5):268–275

Suggested Resources

Global Action on Aging; www.globalaging.org/health/us/peak.htm

The National Association for Self Esteem (NASE); www.self-esteem-nase.org

Senior Centers

Jason S. Keri

Multipurpose senior centers are community facilities that organize and provide a broad spectrum of health, social, educational, and recreational services for older persons. A senior center can also be considered as a community focal point that provides both regular and frequent activities. This definition does not include the vast array of "senior clubs" that meet less frequently or church-related senior groups, which provide only a few activities, yet perform vital roles in their communities. Although this definition may tend to homogenize senior centers, it is important to note that regional variation, as well as shifting state and private funding, results in an ever-changing variety of centers that are as unique as they are similar.

The National Institute of Senior Centers (NISC) estimates that 10 million older adults are provided services annually by the estimated 12,000–16,000 senior centers nationwide. Of these centers, more than 8,000 receive federal funding from the Older Americans Act (OAA) managed by the US Administration on Aging and disbursed through state and area agencies. The OAA was initially signed in 1965 and provides vital support for older Americans at risk of losing their ability to live independently. The wide range of OAA services are often carried out by local senior centers and include congregate and home-delivered meals, transportation, adult day services, referrals, information, advocacy, and legal services. Despite the provisions made by the OAA, only 30% of senior center funding is derived from federal sources. The remainder of center funding is from local government, charitable and religious organizations, and private sources. Senior center gambling trips are significant sources of revenue for some centers and have attracted noteworthy philosophical and legislative debate.

Senior centers are by far the most utilized source of community-based service for older individuals, 4–12 times greater than any other source. The National Health Interview Survey of 1984 sampled approximately 14,000 participants and indicated that the following characteristics predict utilization of senior centers: female, aged 76–84, residence in suburban or rural nonfarm areas, lower income, living alone, less difficulty with activities of daily living (ADL), and

more education until college. Race did not predict participation. In essence, the highest center use is among the less advantaged elderly, but not the least advantaged (those who are frail or require assistance with their ADLs.) Nonetheless, users are more aware of specific service agencies and more likely to consult resources when making service decisions, when compared to nonusers.

Though specific services and staffing vary widely from center to center, surveys from both participants and staff indicate that essential programming includes exercise, crafts, assistance and information, socialization, meals, and transportation. The most desirable supplemental programs include continuing education courses, trips, health services, support groups, and arts such as drama, music, and painting.

The latest NISC assessment suggests a remarkable ability of senior centers to promote healthy aging. Participants reported attending their senior center for more than 8 years, and a vast majority reported that senior center programming has improved their mental and physical health. More than 90% of participants report their physical health as the same or better than the previous year. Notably, 75% of participants report that the center has helped them to remain independent. More than 90% indicate that they formed close friendships since coming to the senior center, and over 80% provide assistance to friends at the center, while 50% receive assistance from friends at the center.

Related Topics

- [Activities of daily living](#)
- [Older Americans Act](#)
- [Social Security](#)

Suggested Readings

- Beisgen BA, Kraitchman MC (2002) Senior centers: Opportunities for successful aging. Springer Publishing Company, New York
Krout JA (1989) Senior centers in America: Contributions to the study of aging. Greenwood Press, CT

Suggested Resources

- National Institute of Senior Centers; www.ncoa.org

Sexual Abuse

Tira J. Stebbins

It is estimated that every year 2.1 million elderly Americans are abused or neglected. It is also estimated that for every case of elder abuse and neglect that is reported to authorities, as many as five cases go unreported. Sexual abuse is often not reported as a type of elder abuse.

Elder sexual abuse is defined as nonconsensual sexual contact of any kind with an elderly person. Sexual contact with a person who is unable to give consent due to cognitive limitation such as dementia, is also considered sexual abuse. Sexual abuse includes but is not limited to unwanted sexual touching, sexual assault or battery including rape, sexually explicit photography, forcing the person to look at pornography, forcing sexual contact with a third person, and coerced nudity or sodomy. Sexual abusers may be spouses or partners, adult children, family members, friends or peers, caregivers, or strangers. Sexual abuse may occur in the older person's own home or in a short- or long-term care facility. Sexual abuse of older adults has not been well-researched or well-documented. It is often not recognized or reported and therefore it is difficult to estimate the occurrence. What is clear is that the elderly are vulnerable to sexual abuse, it must be identified when it occurs, and the impact of sexual abuse is great. Those who are abused must be treated appropriately and education is essential to the prevention of elder sexual abuse.

Many theories have been developed to explain why people abuse elderly persons. One theory is that perpetrators of assault often search for individuals who are vulnerable and easier to victimize, and the cognitive and physical impairments that are a part of aging make older adults more vulnerable. Relying on the assistance of others—family or professional caregivers—either in their own home or in assisted-living facilities also makes individuals vulnerable to perpetrators. Older adults may be perceived as easier to manipulate or overpower, and less likely to report abuse due to dependence on others or feelings of shame and guilt. Another theory is one of transgenerational violence, which means that family violence or abuse is a learned behavior from one generation to another. Along this line, sexual abuse within a family may continue throughout a lifetime. The psychopathology, or psychological

deficiency, of the abuser such as drug and alcohol addiction, personality disorders, mental retardation, and dementia may be a factor. Elderly adults are often vulnerable to sexual assault due to shared living arrangements between the elderly person and the abuser, dependence of the abuser on the victim, and social isolation of the elderly person.

Because older adults are less likely to report sexual abuse, identifying the abuse is difficult. Symptoms of sexual abuse may be the same as other physical or emotional symptoms the elderly person is experiencing, also making it difficult to identify that abuse has occurred. Cognitive impairments such as dementia may make it difficult for the individual to remember or explain the abuse; however, there are physical and emotional symptoms of sexual abuse. Physical signs of sexual abuse include: bruising on inner thighs or breasts, genital or anal bleeding, sexually transmitted diseases, difficulty walking or standing, pain or itching in the genital area, torn or bloody undergarments, and exacerbation of existing illness. Emotional signs of sexual abuse include: scared or timid behavior, depressed or withdrawn behavior, sudden changes in personality, odd or misplaced comments about sex or sexual behavior, and fear of certain people or of physical characteristics.

The impact of sexual abuse on an older adult is often different than that of children and younger adults. A small support system due to the death of friends, lack of mobility, and lack of social interaction makes it difficult for older adults to emotionally recover from an assault. Physical illness may also make emotional and physical recovery more difficult, and elderly adults are more likely to endure serious physical injury from the assault, such as genital tearing or bruising that does not heal properly. Brittle bones may lead to greater injury from an assault, as well as a prolonged healing process.

Care workers for the elderly are mandated to report abuse to local law enforcement, and anyone may report cases of suspected elder abuse to Adult Protective Services. Immediate care of an elderly individual who has been sexually abused may include hospital admission, obtaining a court protective order, and/or placing the individual in a safe home. Medical consultations may include psychiatry, geriatrics, neurology or neurosurgical, and/or orthopedics. Long-term assessment and care vary from individual to individual. Assessments should be made regarding the person's functional status, living environment, and the condition of the caregiver.

Recognizing and acknowledging that older adults are sexually abused is, perhaps, the most important step in preventing elder sexual abuse. Increasing awareness is instrumental in preventing abuse, and therefore educational efforts can be made at the community level. Increasing the availability of respite care, promoting social contact with and support for families with dependent older adults, and encouraging counseling and treatment to cope with personal and family problems that contribute to abuse are all very necessary steps in addressing elder sexual abuse.

Related topics

• Adult Protective Services, • Crime, • Elder abuse and neglect, • Rape, • Violence

Suggested Resources

www.apa.org
www.ec-online.net
www.emedicine.com
www.seniorjournal.com

Sexual Assault

Rachel Rose · Amy House

Sexual assault consists of a wide range of unwanted, coerced, or forced actions involving unwanted sexual contact. Every state has a different legal definition of what constitutes sexual assault. Sexual assault may include rape or attempted rape, grabbing and fondling, and verbal threats. The most researched, studied, and reported type of sexual assault is rape, which includes unwanted or coerced penetration of the vagina or anus by finger(s), penis or other object, or by performing or receiving unwanted oral sex.

Sexual assault is the most underreported of all crimes, and it is estimated that only 30% of sexual crimes are reported to authorities. However, the National Violence against Women Survey found that 1 in 6 women and 1 in 33 men in the United States have experienced an attempted or completed rape in their

lifetimes. Although sexual assault occurs most often in the young (more than half of rapes occur before the age of 18), older populations are also at risk. For instance, one study suggests that 18% of women raped each year are 60 years of age or older. Statistics from the US Department of Justice shed light on the circumstances surrounding the sexual assault of older adults: about 71% of older victims are assaulted in a nursing home, 15% are assaulted in the home of the perpetrator, 12% are assaulted in their homes, and 2% are assaulted in adult care residences.

Sexual assaults are more likely when the victim is reliant on others or is perceived to be unable to say no or defend herself or himself. The main purpose of a sexual assault is to exert power and dominance over the victim. This then makes the elderly, children, physically or cognitively impaired individuals, and those under the influence of drugs or alcohol more at risk for sexual assault. Sexual assaults on female victims are more likely to be perpetrated by individuals that the person knows such as a husband, ex-boyfriend, son, stepfather, or friend. Sexual assaults perpetrated on male victims are more likely to occur when they are young and to be perpetrated by an authority figure or a stranger. Heterosexual men are perpetrators in most sexual assaults, accounting for 86% of all sexual assaults against male victims and almost all sexual assaults against female victims. In addition, 98% of sexually abused older men and women are abused by men.

Sexual assault impacts the victim both mentally and physically, and alters his or her self-image. A number of studies have shown that women and men who have been sexually assaulted experience increased levels of depressive and anxiety symptoms. Depression and posttraumatic stress disorder (PTSD) are often consequences of a sexual assault, and the more severe the assault, the worse the psychological consequences. One study found that rates of depression were about 46% in women who were raped once and close to 80% in women who had been victimized more than once. Men who have been sexually assaulted also experience severe psychological distress. Men are more likely than women to experience PTSD and substance abuse problems after a sexual assault. For example, the rate of alcohol problems for men who have been sexually assaulted is 80%, as compared to 11% for men who have never experienced sexual assault.

Although sexual assault has been shown to impact the emotional health of the victim, sexual assault is also

related to physical health problems and public health concerns. Studies that have examined the relationship between physical health and sexual assault have found that women with a history of sexual assault were more likely to report that they have reproductive or gynecological problems, neurological problems, gastrointestinal problems, and pulmonary problems. In addition, researchers have found that a history of sexual assault is associated with breast cancer, arthritis, headaches, diabetes, physical disability, and a greater likelihood of both medically explained and unexplained somatic symptoms. Of concern for the aging population is the increased possibility of having physical complications from sexual assault such as broken bones, internal injuries, and possibly an early death. According to one study, about half of the elderly sexual assault victims living in nursing homes died within one year of their assaults.

Health risk behaviors have also been associated with experiences of sexual trauma. In particular, sexual trauma appears to increase the risk of alcohol abuse, drug abuse, driving while intoxicated, unsafe sex, physical inactivity, and failing to use seat belts. Women who have experienced childhood sexual abuse are also less likely to have a gynecological exam thus placing them at a greater risk for cervical dysplasia and cancer. Additionally, sexual trauma can increase the likelihood of transmitting a sexually transmitted disease through sexual force because of vaginal or anal trauma, bleeding, and lack of protection. Estimates of the occurrence of sexually transmitted diseases resulting from rape range from 3.6% to 30%. More specifically, for HIV the rate of transmission from rape is estimated to be 1 in 500.

Fortunately, victims of sexual assault who experience psychological distress can recover. Certain psychotherapies, especially cognitive-behavioral therapy, are quite effective in helping victims heal from sexual assault. In addition, certain medications have been shown to be helpful in treating symptoms associated with depression and posttraumatic stress secondary to sexual trauma.

Related Topics

- Acquired immunodeficiency syndrome, ● Chronic pain, ● Depression, ● Intimate partner violence, ● Post-traumatic stress disorder, ● Rape, ● Sexually transmitted diseases

Suggested Readings

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Suggested Resources

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- National Center for PTSD; www.ncptsd.org
 - National Committee for the Prevention of Elder Abuse; www.preventelderabuse.org
 - Rape, Abuse and Incest National Network; www.rainn.org

Sexual Behavior

Melissa Santos · Lara Stepleman

Sexual behavior is generally defined as an act of physical intimacy. Functionally, consensual sexual behaviors occur for reproduction, enjoyment, or as an act of affection. Sexual behavior may occur alone, with another individual, or with multiple individuals. Further, sexual behavior may occur with those of the opposite sex or with those of the same sex.

Sexual behavior consists of many different kinds of behavior. Some sexual behaviors such as vaginal sex, oral sex, and masturbation are viewed as commonplace. Other sexual behaviors such as group sex, sadomasochism, and anal sex are viewed as less common and often get labeled as being deviant. A variety of forces can shape our definition and views of sexual behavior including family, society, the media, and religion. One of the most overriding influences of sexual behavior is culture.

Culture norms often determine what is considered acceptable within a given community. An American view on sexual behavior may be similar or quite distinct from another country's conceptualization

of sexual behavior. Throughout history, American culture has continually redefined what constitutes appropriate sexual behavior. For example, the social acceptance of homosexual behavior has fluctuated over time. Recent historical changes such as the increasing frequency of positive representations of gays and lesbians in the media, the removal of homosexuality as a disorder from the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM), and the striking down of sodomy laws are examples of forces that have influenced changing perceptions.

Within modern American culture, the medical profession has exerted great influence over what gets construed as healthy sexual behavior. In particular, the field of psychiatry has contributed widely to the definition of disordered sexual behaviors through the DSM. The American Psychiatric Association's development of the DSM provides an evolving definition of behaviors viewed as deviant. Presently, the DSM-IV-TR lists three groups of sexual disorders: sexual dysfunctions, paraphilic disorders, and gender identity disorder. Specifically, the paraphilic disorders focus on sexual behaviors viewed to be abnormal and to cause disturbance in various realms of life functioning. Paraphilic disorders refer to an individual finding unconventional objects or nonconsenting individuals to be sexually arousing. They tend to occur primarily in males although females are likely underestimated and underrepresented in research. The paraphilic disorders include pedophilia, exhibitionism, fetishism, frotteurism, sexual masochism, transvestic fetishism, voyeurism, and paraphilia not otherwise specified (which includes necrophilia and urophilia). There has been considerable debate among health professionals as to whether many of these behaviors are truly disordered or instead represent normal variation in the human sexual experience.

In addition to the medical profession, the legal system can also impact our view of what is acceptable sexual behavior. Laws dictate with whom we can have sex, in what manner, and for what purpose. For example, until a 1965 US Supreme Court decision, the state of Connecticut attempted to ban married couples from having sex for any other reason but procreation by making it illegal for married couples to engage in sexual behavior while using birth control. In 2003, the US Supreme Court ruled that homosexual sodomy laws, or laws targeted at individuals who engage in sexual behaviors that do not lead to procreation (e.g.,

anal and oral sex) are illegal. Adultery continues to be illegal in some states, but these laws are infrequently enforced. Furthermore, nonconsensual sexual behavior such as rape and sexual acts with minors is illegal throughout the United States.

Another factor that can influence our view of sexual behavior is age. Although not often viewed as such, sexuality and sexual behavior is a lifelong process. It is a commonly held belief that with age, a person's interest and ability to engage in sexual behavior decreases. However, research supports the notion that even with increased age, desire, and engagement in sexual relationships do continue. And while sexual engagement may decrease for many reasons, desire continues to remain at levels congruent with younger age groups. Several factors may play a role in the engagement of sexual behavior in aging individuals that can be viewed from a biopsychosocial perspective.

Biologically, factors such as illness and medication may influence sexual behavior. Diabetes, hypertension, and arthritis may impact the ability of an individual to engage in sexual behavior. Psychologically, mental illness such as anxiety or depression and substance use can affect sexual behavior and may be underdiagnosed and undertreated in the elderly. Socially, representations of older individuals engaging in sexual behavior are often negative such that individuals are portrayed as either asexual or as sexual deviants (e.g., dirty old man). American society, which values youth, may fail to appreciate the significance of sexual relationships among aging individuals. Although there are a growing number of exceptions, few positive images are available in the media or elsewhere of sexual behavior between older adults.

The advent of medical treatments for sexual dysfunctions have provided benefit to many individuals who desire sexual behavior involving penetration but encounter medical obstacles. On the other hand, the process of aging may also result in a broadening definition of "normal" and "healthy" sexual relationships. Because of health, disability, or for other reasons, a sexual relationship may no longer primarily consist of intercourse. Rather, behaviors such as petting or oral sex may become predominant sexual behaviors within a relationship.

Medical professionals may contribute to the idea that sexual behavior among older adults is not important by not providing regular opportunities for open conversation with their patients about their sexual

health concerns. Inaccurate perceptions regarding the lack of engagement in or importance of sexual behavior in the aging are pervasive. As opposed to other age groups, medical professionals may not view sexual behavior as a vital area for discussion or concern in older adults.

Inadequate discussions about sexual behavior and sexual health in aging populations can have deleterious effects. One particular consequence of sexual behavior that has been the topic of recent research is the increase in newly infected HIV cases in older populations. Reports suggest that HIV infection in individuals over the age of 50 has doubled over the past 5 years. Some studies suggest that health care providers' lack of discussion about sexual health, combined with beliefs about infrequent engagement in sexual behavior by older populations may provide missed opportunities for prevention as well as early detection of infection. Further, few age-sensitive preventative interventions have been designed to target this population.

In summary, sexual behavior is an important area for discussion throughout the lifespan. Many factors influence our views of what constitutes healthy sexual behavior. Further, these views about sexual behavior are continuously evolving. It is essential that medical and mental health providers elicit concerns about sexual behavior regardless of the age of their patient. Culturally, it is essential that accurate, positive representations of sexual behavior across the lifespan become more widely available.

Related Topics

- Acquired immunodeficiency syndrome, ➤ Anxiety disorders, ➤ Depression, ➤ Domestic partnerships, ➤ Homosexuality, ➤ Homosexuals, ➤ Marriage, ➤ Masturbation, ➤ Safer sex, ➤ Sexual dysfunction, ➤ Sexuality, ➤ Sexually transmitted disease

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Sexual Dysfunction

Kathleen Franco · John Franco · Mohammed Alishahie

Before the 1960s sexual revolution, sexual dysfunction, if not impotency, was felt to be a normal characteristic of aging, which could be left untreated. More recent research indicates that sexual activity persists in over half of males and one fifth of females over the age of 75 years. Oral agents improving erectile dysfunction for men and hormonal replacement for women have allowed longer, more active sex lives. National, political, and sports celebrities who advertise their own use desigmatize reliance on these medications and encourage men to "ask your doctor" rather than feeling embarrassed or ashamed. Older couples can present their concerns and find more knowledgeable physicians with increasing options for treatment. The level of sexual activity will depend on the availability of the partner, the health of each, prior interest and activity of both, and current interest. Older men are more sexually active than women, and partners more active than singles. Nearly two thirds of older men describe sexual activity as important to their overall quality of life compared to one third of women between 60 and 74 years of age. In a 1998 survey by the National Council on the Aging, 80% of those between 60 and 90 had sex at least once in a month. As a group, older men are twice as likely as older women to want more sex than they are having.

Women often experience lower sexual-desire and difficulty achieving orgasm. For men, erectile dysfunction is more common, occurring in 50% of men between 40 and 70 years of age and 70% in those aged 70 or more years old. Erectile dysfunction hampers self-esteem even when men are aware that physiological changes or medications are the cause. The inability to achieve and maintain an erection adequate for sexual function is most often induced by medical or psychological conditions: diabetes mellitus, cardiac and vascular disease, cancer, degenerative joint disease, or psychiatric disorders such as anxiety, depression or dementia. Increased depression or anxiety can be initiated by the death of a loved one, separation, retirement, financial difficulties, or physical illness. A snowball effect can occur as one factor increases another before or after the onset of erectile dysfunction. Pain, difficulty moving, or fatigue may compound the symptom causing additional

loss of confidence or desire. Premature ejaculation, common in younger men, can continue into later years, but the frequency is unknown.

There are also many medications that can precipitate sexual dysfunction. Among these are drugs that control blood pressure, cardiac disease, allergies, or autoimmune disorders. In addition, medicine used to reduce anxiety, depression, mania, or psychosis can also cause dysfunction in various forms from reduced desire or erectile dysfunction to anorgasmia and retrograde ejaculation. Chemotherapy agents for treating cancer and drugs reducing symptoms of Parkinson's disease join the large list of drugs with sexual side-effects. As with physical illnesses, medications are likely to cause more sexual dysfunction in the older population who already carry greater physiological burden from the aging process.

Hypoactive sexual desire occurs in younger women, but not uncommonly, its onset is in the years after menopause when estrogen and testosterone levels are low. Spousal or cultural expectations can increase the pressure a woman may feel and further increase guilt and lower self-esteem. Orgasmic disorders are frequent in women of all ages. Many will not interpret anorgasmia as a problem in their relationship or feel the need to seek a physician's advice or referral for behavioral therapy. For newer onset, cases of sexual dysfunction medication side effects may have increased anorgasmia or significantly prolonged the time required to reach orgasm. Often a medication switch is possible allowing return of normal function.

There are multiple concerns grouped under the subheading of sexual pain disorders. Dyspareunia refers to pain women feel during intercourse and is quite common after menopause, secondary to vaginal dryness or other medical conditions. Gynecological malignancies or their various treatments are frequently associated with pain. Vaginismus, another disorder associated with painful intercourse, is believed to begin much earlier at the onset of sexual activity, but may persist into older age in life if not treated successfully.

It is recommended that patients with sexual concerns have a thorough physical examination with enough time to present a thorough history to their primary care or specialist physician. Among other items, this history should include medical conditions, medications plus supplements, emotional and cognitive assessment, and discussion of the health of the relationship. Without these, the likelihood of successful treatment is diminished.

Sexual dysfunction associated with dementia can have diverse presentations. Difficulty with performance and inability to follow cues is not atypical. In other individuals, increased sexual interest, disinhibition or sexually inappropriate behavior in public can be upsetting to the spouse or caretakers. The non-demented partner can be drawn to sexual relationships outside of the marriage further fueling paranoid ideations of the cognitively impaired partner. If the couple is still sexually active, in another scenario, it may be necessary to determine if the demented individual is honestly consenting to intercourse. Overall, however, there is generally a reduction in sexual activity in these couples. After a thorough assessment with medical evaluation of the urogenital, vascular, and neurological systems, the patient and physician can jointly decide on the best treatment options. For example treating major depression with one of the medications that does not reduce desire or ability to climax could be immensely helpful to the patient and spouse. Cholinesterase inhibiting medications for patients with dementia can help memory and self-esteem to improve sexual activity. In some instances, individuals with dementia may be hypersexual, causing problems to partners or those around them. If behavioral approaches have been unsuccessful, antidepressant and antipsychotic medication may reduce libido. Anti-hypertensive agents as in a *B*-blocker may have a similar result.

Treatments

Behavior therapies for sexual dysfunction can be useful if both members of the couple desire to participate and are willing to follow recommendations of the therapist. Some couples may be uncomfortable reinterpreting their own self-expectations or may have trouble with sensate focus exercises. Physical illness may require changes in types of sexual activity the couple once enjoyed. Difficulty moving, painful joints, and briefer spurts of energy may hinder the couple's sexual abilities. Non-sedating analgesic medication, regular exercise, or physical therapy can indirectly improve sexual well-being. If blood sugars of diabetic patients and oxygenation of those with pulmonary disease are monitored regularly, the individual may find improvement in their sexual capacity. Changing medications the individual is already taking to the ones with lesser side-effect or trying additional others to offset side

effects may be options. This requires constant reassessment when different physicians are caring for the individual and close communication to all with the patient being highest on the list.

Male sexual dysfunction treatments: A discussion with one's doctor can explore the best therapeutic choices for improving erectile dysfunction. There are a variety of treatment options available for erectile dysfunction including pumps, injections, patches, and pills. The latter has resulted in more men asking about medication commercials they have seen on television. There are three "phosphodiesterase type 5" medications for treatment of sexual dysfunction with onset at 30–60 min and lasting from roughly 436 hours depending on which is chosen. With physical stimulation, 70–80% of those using medication will have success. Besides cost, there are side effects that can limit use, including dizziness from drop in blood pressure especially in the presence of some cardiovascular medications. Headaches and gastrointestinal symptoms can also occur. Individuals with some blood disorders should avoid these medications and those with chronic liver or renal disease should use these medications with caution. Agents placed under the tongue and that act more quickly through dopamine system are being developed.

If an individual's blood test indicates low levels of testosterone, a patch on the skin can be worn to supply this important hormone. There are injectable agents of different varieties that have onset in one third of the time needed for the oral agents and similar success rates. The injection into the base of the penis can be painful and on occasion causes a more severe side effect, priapism.

Vacuum devices have been available for sometime that allow blood to come into the penis to produce an erection. The individual attaches a plastic tube with a tiny pump that will be removed once a ring is put into place to maintain the penile erection. Although the effect is immediate, it can be difficult to manage the procedural steps for some older individuals. Delayed orgasm is one side effect that can occur. Penile implants carry surgical risk and are not always successful. They are permanent in that once they are in place, erectile function can never be achieved in any other fashion due to surgical alterations.

Female sexual dysfunction treatments: Besides behavioral therapies for reduced sexual desire in

women, estrogen replacement after menopause may help. Certainly vaginal dryness is improved and reduced pain from lack of lubrication will be noticed. Estrogen, however, carries significant cardiovascular risk in the first 2 years of use. The male hormone testosterone is also present in premenopausal women but falls after menopause. Testosterone has been given with some benefit to women, but unwanted hair, weight gain, and other side-effects limit its use. Sildenafil has been studied in women. The success rates for low desire and other disorders has been far less helpful than the outcomes for men with erectile dysfunction.

In conclusion, taking sexual concerns to a physician can be beneficial as one ages. Today there are multiple available treatments with therapies in many cases that are easy and safe. Always starting with a physical examination and laboratory testing to augment the thorough history is a must with any sexual dysfunction. From that point, the doctor and patient as a team can make a decision that can help achieve the patient's goals.

Related Topics

- Body image, ➤ Coitus and vaginal dryness,
- Dementia, ➤ Depression, ➤ Femininity, ➤ Hormones, ➤ Masculinity, ➤ Sexual behavior, ➤ Sexuality

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Sexuality

Sarah Shelton · Lara M. Stepelman

The term sexuality denotes a biopsychosocial phenomenon that consists of physiological, psychological, interpersonal, social, and cultural processes. In this regard, sexuality is a basic human experience that is multidetermined. It is much more than a simple

biologically driven instinct. Although physical responses and sexual behaviors are the most obvious signs of sexuality, there are a host of more subtle factors that contribute to sexual experiences.

One biological component of sexuality includes the genetic contribution to determination of sexuality, which has been implicated in recent research. Also contributing to sexuality are the physiological mechanisms of the sexual response cycle, which includes the phases of desire, arousal, orgasm, and resolution. This cycle involves complex relationships between hormones and neurotransmitters that are not fully understood. Furthermore, the physical nature of the sexual response cycle does not operate independently as it is heavily influenced by social and cultural norms.

An individual's thoughts, feelings, attitudes, and beliefs about sexuality are shaped by the learning process throughout development. People acquire their own understanding of sexuality through observing the behavior of others, messages and images about sexuality communicated through the media, explicit teaching from family, friends, and authority figures, as well as their own personal sexual experiences.

Although some aspects of sexuality are universal (e.g., the sexual response cycle), many features of sexuality vary between cultures, communities, generations, and individuals as a result of differing norms, mores, and values. These differences between groups of people and individuals make it difficult to define what is "healthy" versus "unhealthy" sexuality. Religious beliefs and teachings have historically shaped the public's views on sexual behaviors and continue to exert a heavy influence on sexual standards today. For example, there is currently dissent between many religious groups regarding sexual orientation, gay marriage, and issues of birth control that directly and indirectly affect public policy and legislation.

The American Psychiatric Association has chosen to define sexual dysfunction as disturbances in the psychological and physiological characteristics of the sexual response cycle that result in significant distress and interpersonal problems. The guidelines for diagnosing sexual dysfunction take into account cultural differences that influence sexual norms. There is currently controversy in the mental health field regarding whether to label sexual behaviors that occur between consenting adults as "disorders," even if those behaviors deviate from those of the majority. Examples of currently debated sexual disorders include sexual sadism-masochism and some fetishes that may be strongly culture bound.

Sexuality changes with the aging process. These changes are often related to physiological, psychological, and social changes that typify growing older. Both men and women are affected by the physical changes associated with age. Postmenopausal women often experience a change in their sexuality due to a change in hormone levels, specifically decreases in testosterone and estrogen that tends to affect the physical aspect of arousal. Otherwise, sexual problems tend to decrease with age among females. For males, the most common sexual problem is erectile dysfunction, as it becomes increasingly difficult for men to obtain and maintain an erection as they become older. The primary age-related factor that can negatively impact sexuality is health status. As people age, they become increasingly prone to physical ailments that can make sexual behavior difficult and uncomfortable. Furthermore, medications given to treat health maladies may have negative side effects where sex drive or sexual functioning are concerned.

Psychological factors include, but are not limited to, a decrease in libido as well as a sense of fatigue among older adults. Although the incidence of depression in the population tends to decrease with age, depression in the elderly is often under diagnosed and left untreated. This is because some depressive symptoms are inaccurately attributed to the natural aging process in this population. Since loss of sexual interest may reflect a depressive episode, individuals who experience a decreased sex drive should consult with a mental health professional for a depression screening rather than accept their experience as a normal part of aging.

Another important psychological variable is that of body image. However, it appears to be a person's satisfaction with his or her own body image that influences sexuality as opposed to the attraction of one partner to the other. In fact, partners tend to rate each other as increasingly attractive with age. Also, the more an individual perceives his or her partner to enjoy sexual activity, the more frequently it will be initiated.

Social influences on sexuality among older individuals include benefits as well as challenges. Many are enjoying a "second honeymoon" with their partner, as free time increases due to factors such as retirement and children being out of the home. Some may re-enter the dating world if divorced or widowed. Challenges related to sexuality later in life include the loss of a sexual partner and lack of partner availability. Statistically, in heterosexual relationships, men are less

affected by partner loss because women tend to live longer on average.

Until relatively recently, society (including the medical profession) was under the impression that the importance of sexuality decreased with age. However, the widespread popularity of hormone replacement therapy for women and erectile dysfunction medications for men among older adults has revealed the importance of sexuality to aging individuals. The changing conceptualization of sexuality later in life is still in progress. Patients and doctors alike acknowledge that addressing issues of sexuality at regular medical appointments is not as common as it should be but is increasing in frequency. This is especially notable, as sexual disturbance can be a sign of psychological problems, such as depression, as well as some serious medical problems including heart disease.

The response of patients and their medical providers to these concerns is the biggest change over recent years. Currently, when sexual problems are identified they are viewed as something to be overcome rather than something to be accepted as a natural part of the aging process. This change in attitude is considered by some to be a "second sexual revolution," as sexual attitudes and behaviors among older adults are changing dramatically.

Changes in the way medical providers and society at large view sexuality later in life include concerns about sexually transmitted diseases. Although younger people remain the population most at risk, the incidence of STDs, including HIV or AIDS, in older adults is rising. For example, one out of every ten individuals diagnosed with AIDS is over the age of 50. The rise in STDs among older Americans is thought to be the result of three factors. First, people with AIDS are now living longer due to advances in medical treatment and are therefore included in the demographic statistics. The second factor is an unfortunate and ironic consequence of the medical successes in HIV or AIDS care. Because of recent medical advances, individuals across all age groups are minimizing the gravity of the illness and are engaging in an increasing amount of risky sexual behaviors. The third factor is that improvements in treatments for sexual dysfunction allow for more frequent sex, thereby increasing the likelihood of STD contraction and transmission. Implications for the rise of STDs among older adults include the need for public education campaigns about safe sex for this population and routine STD

screenings for older individuals who are considered at risk for infection.

Several landmark studies on aging and sexuality have been conducted in the last decade. In 1998, the National Council on Aging (NCOA) conducted a survey and reported that almost half of Americans age 60 and over are still sexually active. The majority reported having sex less frequently than when they were younger and most reported a desire to increase the frequency of their sexual behavior. This was true in all age groups, including individuals over 80 years old. Even though respondents reported less frequent sexual behavior, most reported finding sex as satisfying of an experience as it was in early and mid-adulthood.

In 1999, the American Association of Retired Persons (AARP) and *Modern Maturity* magazine conducted a national study examining sex among people 45 years and older. Although frequency drops with age, more than 70% of surveyed men and women with regular partners are sexually active enough to have intercourse at least monthly. About two-thirds of those polled were extremely or very satisfied with their physical relationships. In 2004, the AARP conducted a survey to update their findings. They found that sexuality is at least as important and maybe even more important to aging Americans as in their 1999 study. Major updates in findings include that more than twice as many men are utilizing erectile dysfunction drugs compared to those polled 5 years earlier.

Despite common trends, significant variability exists between individuals with regard to if and how the aging process influences sexuality. However, experts agree that sexuality can remain a healthy, important, and rewarding part of the human experience throughout the life span. This is provided one possesses understanding and acceptance of how sexuality changes as part of the normal aging process.

Related Topics

- Body image, • Depression, • Menopause, • Sexual behavior, • Sexual dysfunction, • Sexually transmitted disease

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- Reuben D (1997) Everything you always wanted to know about sex after 50 (but were afraid to ask). New choices: living even better after 50. 37(5):45–47

Suggested Resources

- American Association of Retired Persons (AARP); <http://www.aarp.org>
- American Psychological Association (APA); <http://www.apa.org/pi/aging.sexuality.html>
- National Council on Aging (NCOA); <http://www.ncoa.org>
- National Institute on Aging (NIA). Age Page: Sexuality in Later Life; <http://www.nia.nih.gov>

Sexually Transmitted Disease

Tomas Gigena · Simran K. Singh

Sexually transmitted diseases (STDs) are a major public health problem and account for major disability worldwide. Untreated infections can lead to complications including upper genital tract infections, infertility, cervical cancer, and enhanced transmission and acquisition of the human immunodeficiency virus (HIV). Infections are spread through oral, vaginal, or anal contacts. The best way to avoid transmission is to abstain from sexual contact. A long-term monogamous relationship with a partner who has been tested and is known to be uninfected and barrier protection during any type of sexual interaction are ways to reduce the risk of an STD.

Chlamydia is the most commonly reported bacterial STD in the US, with approximately 4 million cases per year. It affects nearly 5% of sexually active adolescent girls and is one the leading causes of infertility in women.

Chlamydia is often confused with gonorrhea, and it is traditionally known as the “silent” disease because symptoms are often not present. Infected persons may unknowingly pass chlamydia to their sexual partners and mothers can transmit the infection to their newborn late in pregnancy. If symptoms are present, they appear within 1–3 weeks of exposure. In women, the most common symptoms are vaginal discharge,

burning with urination, and pelvic pain. Men typically experience burning with urination, rectal discharge (from anal intercourse), or a urethral discharge. Neonates affected by chlamydia usually have bilateral purulent conjunctivitis.

There are two types of laboratory tests commonly used to diagnose chlamydia. One involves collecting a specimen from an infected site (cervix or penis) to detect the bacterium directly. From the specimen, diagnosis can be made from specialized techniques such as a cell culture analysis, direct fluorescent antibody (DFA), or nucleic acid amplification techniques. Another test known as an enzyme immunoassay uses a urine sample to detect the chlamydia bacteria.

Chlamydial infections are treated with antibiotics such as oral doxycycline or azithromycin. It is essential to also treat the partner of the affected individual to prevent repeat transmission. As many individuals with chlamydial infection concomitantly have gonorrhea, it is recommended that both infections be treated simultaneously.

Gonorrhea is one of the most common sexually transmitted infections in the United States, affecting approximately 800,000 people each year. However, it is difficult to determine an exact number of cases as a significant number are not reported.

Gonorrhea is caused by a bacterium called *Neisseria gonorrhoea*. Symptoms in women are usually absent but may include a burning sensation with urination, a discharge from the vagina, bleeding between menstrual periods, and pain during intercourse. Men usually complain of a burning sensation with urination, a pus-like discharge from the penis, swollen or painful testicles, and pain during intercourse.

Diagnosis of gonorrhea can be made with gram stain, culture, or DNA probe of the oral, urethral, cervical, or anal regions. Treatment of gonorrhea involves antibiotics usually a cephalosporin called ceftriaxone or a macrolide called azithromycin. Partners of infected individuals should also be treated to prevent transmission. Concomitant therapy for chlamydia is also strongly suggested. Unfortunately, there is an increasing problem with bacterial resistance to these medications.

Although bacterial vaginosis (BV) is the most common vaginal infection, it is not considered an STD. BV develops when there is replacement of the normal bacterial vaginal flora with an overgrowth of anaerobic microorganisms, *Mycoplasma hominis*, and *Gardnerella vaginalis*. The reason for this shift in bacteria is

not completely understood, but associations have been made with multiple sexual partners, douching, intrauterine devices (IUDs), and not using a condom.

The most common symptoms include an abnormal vaginal discharge with a strong fishy odor (especially after intercourse), burning with urination, and itching or irritation around the outside of the vagina. In some instances, women may have no symptoms at all.

The diagnosis of BV is clinical, based upon a homogenous, grayish-white discharge, vaginal pH > 4.5, positive whiff-amine test ("fishy" odor when 10% potassium hydroxide is added to the sample), and clue cells on saline wet mount (vaginal epithelial cells studded with adherent bacteria). Gram stain, culture, and DNA probes are alternative methods.

Bacterial vaginosis is treated in symptomatic women with oral or intravaginal antibiotics such as metronidazole. In general, male sexual partners do not require treatment. Women may get recurrent episodes of BV, but it is unclear if treatment of male partners may reduce these recurrences.

Trichomoniasis is an STD caused by a protozoan parasite, *Trichomonas vaginalis*. Men may notice an irritation inside the penis and a mild discharge or burning after urination or ejaculation, but typically do not have symptoms. Symptoms in women include a frothy, yellow-green vaginal discharge with a strong odor, as well as irritation and itching of the genital area. Diagnosis is made microscopically by demonstrating motile trichomonads from a vaginal discharge or urine cultures. Trichomoniasis can be cured with a single oral dose of metronidazole but both partners should be treated simultaneously to avoid reinfection.

Genital herpes is a highly prevalent infection in the United States, affecting 45 million individuals, or one in five adolescents and adults, and is a risk factor for acquisition of HIV. Most genital herpes are caused by herpes simplex virus type 2 (HSV-2), but there is an increasing incidence of type-1 (HSV-1) infections.

The first outbreak of genital herpes usually occurs within a week after the initial exposure and consists of small, painful genital blisters filled with clear or cloudy fluid. These blisters break easily, quickly becoming shallow, red, open sores. Other symptoms may include burning with urination, fever, painful swelling, or a flu-like illness. However, most individuals never have symptoms or lesions, but still are able to transmit this infection to susceptible sexual partners.

Most herpetic infections are diagnosed clinically based on multiple, shallow, tender vesicular genital

ulcers; laboratory studies may also be used for confirmation. Genital herpes cannot be cured, but the antiviral medications Acyclovir, famciclovir, and valacyclovir, reduce the number of outbreaks, shorten the duration of active viral shedding, and reduce pain.

Human papilloma virus (HPV) is the most common STD in the United States, affecting nearly 20 million Americans, with an annual incidence of approximately 6.2 million cases. Most infections are asymptomatic, and infection may occur despite the use of condoms.

HPV may appear as genital warts weeks to months after exposure and later cause cancers of the cervix, vulva, anus, or penis. Genital warts are usually diagnosed by visual inspection of the effected area. The Papanicolaou (Pap) smear is the cytologic technique used to detect disease of the cervix and vagina and is recommended annually for women.

No antiretroviral therapy for HPV is currently approved. Anogenital warts can be treated topically with podophyllotoxin, trichloracetic acid, 5-fluorouracil, or immune modulators such as imiquimod. Cryotherapy (freezing with liquid nitrogen) and surgical excision are other treatment modalities.

Syphilis is an infection caused by the bacteria *Treponema pallidum*. Although there was a "mini-epidemic" of new cases of syphilis in the late 1980s and early 1990s, the number of new cases reported has been decreasing. There is a higher rate of cases among men than women, with the highest incidence in men having sex with men. Although some individuals never develop symptoms (latent disease) and thus are unaware of their illness, all remain at risk for late complications of syphilis without treatment.

The signs and symptoms of the disease are divided into different stages. The primary stage is marked by single or multiple sores called chancres, which appear 10–90 days after exposure to an infected lesion. The chancre is usually a firm, round, small, painless lesion, lasting 3–6 weeks and may heal without treatment. The secondary stage may appear months later and is characterized by the presence of a rash usually on the palms of the hands and soles of the feet that does not itch. Other common symptoms of secondary stage include swollen lymph glands, sore throat, headache, fever, muscle ache, and fatigue. Without treatment, the late stage develops and this is when permanent organ damage occurs, typically affecting the brain, eyes, heart, blood vessels, liver, bones and joints. Symptoms may also include paralysis of certain muscles, numbness, gradual blindness, dementia, or even death.

The diagnosis of syphilis can be made in the primary stage with direct visualization of the organism under a microscope using a special darkfield examination. During the secondary or late stage of syphilis, blood tests are utilized. VDRL and RPR are screening tests, while FTA-ABS and MHA-TP are confirmatory tests.

Early syphilis is still effectively treated with a single injection of penicillin, but later stages may require additional doses of penicillin. However, permanent organ damage caused by the later stages of the disease is irreversible.

Related Topics

- [Acquired immunodeficiency syndrome \(AIDS\)](#)

Suggested Readings

- Miller K et al (2003) Update on the prevention and treatment of sexually transmitted diseases. Am Fam Physician 67:1915–1922
Woodward C et al (1999) Drug treatment of common STDs: Part I. Herpes, syphilis, urethritis, chlamydia, and gonorrhea. Am Fam Physician 60:1387–1394

Suggested Resources

- CDC National Prevention Information Network (NPIN). STDs Today; <http://www.cdcnpin.org/scripts/std/std.asp>
eMedicine http://www.emedicine.com/emerg/INFECTIOUS_DI_SEASES.htm
National Institute of Allergy and Infectious Diseases; <http://www.niaid.nih.gov/publications/stds.htm>
United States Department of Health and Human Services Center for Disease Control and Prevention. STD Fact Sheets; <http://www.cdc.gov/std>

Shingles

Mohamed H. Yassin · Robert A. Bonomo

Varicella zoster virus (VZV) is the cause of two clinically distinct illnesses, chickenpox (Varicella) that is primarily a disease of children and Herpes zoster (HZ) or *Shingles* that is primarily a disease of elderly

and individuals who are immunocompromized. VZV is a type of herpes virus (α -herpesvirus) also named as human herpes virus III.

After the initial VZV infection (chickenpox) or vaccination (live-attenuated vaccine), patients develop lifelong immunity against chickenpox. Soon after the primary infection or vaccination, the VZ virions (virus components) travel to the nerve cell centers (nuclei). After the initial phase of virus replication, VZV goes into a dormant state (latency) with absence of virus release and persistence in the nerve (dorsal root ganglia [DRG]). The VZV vaccine causes an exactly similar reaction as the primary VZV infection.

With aging there is considerable decrease in VZV-specific cell-mediated immunity (lowered resistance to herpes virus). In vitro (laboratory-based) studies show diminished capacity of a type of infection-fighting peripheral blood cell (T-cells) to spread or proliferate in response to VZV. The loss of specific T-cell response is thought to be the main cause for susceptibility to shingles in elderly. In contrast patients continue to have a lifelong immunity against chickenpox.

The above-mentioned immunological background explains the sharp increase in contracting HZ in the elderly. The incidence of HZ increases from <1 in 1000 person-years in children <10 years, to >10 per 1000 person-years in older individuals >65 years. The incidence of post herpetic neuralgia (nerve pain due to herpes infection or postherpetic neuralgia [PHN]) is much higher in individuals >60 years affecting over 50% of HZ infected elderly. The persistence of the VZV virions in the DRG and lack of specific T-cell response is responsible for the continued damage and persistence of PHN.

Clinical Picture

The word shingles is from the Latin *cingulum* or girdle. Shingles are much more common in older age, but it has been reported in younger people as well as children. Unlike chickenpox, HZ does not give a lifelong immunity and recurrence can happen. HZ is much less infectious when compared to chickenpox. HZ lesions contain active VZV and potentially can transmit the virus. Shingles or HZ lesions are unilateral (confined to one side of the body), vesicular (blister-like) eruptions that follow a dermatomal distribution (appear in specific sections/segments of the body). The most common sites are thoracic (trunk), cervical

(neck), or ophthalmic (eye). Pain usually appears 48–72 h before the lesions and last usually for 2 weeks. Pain is usually deep aching pain, burning pain, or altered sensitivity to touch. Pain may occasionally be the only symptom of HZ. Lesions take 7–10 days to crust and may take up to a month to heal.

Involvement of the nerves leading to the eye (ophthalmic division of the trigeminal nerve V1) carries more risk of complication than pain. Zoster involving V1 can result in keratitis (inflammation of the cornea), corneal ulceration, iridocyclitis (disease of the iris of the eye), and secondary glaucoma. The key issue is immediate ophthalmic referral with the earliest symptoms of visual disturbance. Patients with V1 zoster are more likely to have concomitant VZV meningoencephalitis (brain infection due to herpes). Another possible presentation of Shingles is Ramsay Hunt syndrome with involvement of a part of the nervous system called the geniculate ganglion. Patients with geniculate ganglion Zoster have lesions on the external ear, loss of taste in the anterior two thirds of the tongue and may have a one-sided facial paralysis or droop (ipsilateral facial palsy). Immunocompromised individuals (for example those receiving treatment for cancer) can have a more severe illness, with more diffuse and deeper tissue involvement.

Postherpetic neuralgia is the most common complication of VZV reactivation in immunocompetent (those without weakened immune systems) patients. VZV reactivation is rarely life-threatening, but the prolonged neuropathic pain of shingles can adversely affect the quality of life of older individuals markedly. The most common definition of PHN is the presence of pain more than a month after the onset of the eruption of HZ. The risk of PHN increases with age but is not increased in immunosuppressed patients. Pain may resolve in many of the patients with PHN. Multiple nervous system disorders are caused by VZV reactivation including postherpetic neuralgia, encephalitis (inflammation of the brain tissues), CNS arteritis (inflammation of blood vessels in the brain), myelitis (bone inflammation), and postinfectious polyneuropathy (a severe illness involving muscle paralysis also known as Guillain–Barré syndrome).

Diagnosis

The diagnosis of HZ is usually made on the basis of history and clinical examination. The majority of

herpes zoster (shingles) cases are diagnosed based on clinical grounds. Routine diagnostic studies are not requested in most of the cases. However, diagnostic studies can be useful in immunocompromised hosts or complicated VZV infection as meningoencephalitis (infection of brain and related tissues) or pneumonia. Diagnostic tests for herpes zoster include obtaining fluid from the vesicles (skin eruptions), and analyzing the fluid with special preparations or procedures.

Therapy

Prevention and Infection control Universal VZV vaccination of children in the past led to dramatic decrease in *varicella* and related complications. However, the effect of universal VZV vaccination in children on the incidence of HZ in adults is not known. Some experts are expecting an increase in HZ among the elderly that poses a great risk to the aging community. In a recent clinical trial on VZV immune adults 60 years or older, VZV vaccination was helpful in preventing VZV reactivation and PHN. These data showed reduction of HZ by 51% and PHN by 67%. The side-effects profile was favorable and the cost effectiveness will be dependant on the price of the vaccine. These data are very promising but routine vaccination can not be a general recommendation yet.

Transmission of VZV from HZ lesions is primarily by contact and to a less extent by airborne transmission. Although documented on case-report level, many authorities believe that HZ represents reactivation rather than a transmissible illness. No isolation is needed for household cases. Droplet and contact isolation is required for *varicella*, disseminated HZ, and localized *zoster* in immunocompromized patients. Many of the elderly live in long-term nursing facilities that can potentially lead to outbreaks of the HZ.

Exposed patients are classified according to their immunological status and previous VZV exposure or vaccination. For immune cases little is needed. VZV susceptible, immunocompetent patients should be vaccinated as soon as possible (up to 120 h). Immunocompromized individuals should receive *varicella zoster* immune globulin (VZIG) or the medication acyclovir if VZIG is unavailable. Exposed susceptible patients should be placed on strict isolation from day 9 until day 21 after the last exposure. Exposed

susceptible health care workers should be vaccinated and excluded from work from day 9 until 21 after exposure. Vaccination for susceptible adults is two doses 4–8 weeks apart.

Patients with HZ should receive antiviral therapy for 7 days. Longer treatment does not show any additional benefit. Treatment should be started as soon as vesicles appear. Typically antiviral therapy should be started within 72 h of rash appearance. It can also be started if new vesicles are still erupting. The goal for antiviral therapy is to promote skin healing and decrease discomfort.

Pain control for PHN is a real clinical challenge. Multiple modalities have been used with variable success; nonsteroidal anti-inflammatory drugs (NSAIDs), tricyclic antidepressants, carbamazepine, depakote, gabapentin, nerve block, local heat, acupuncture, and behavioral techniques. Antiviral therapy with acyclovir or other medications does not prevent PHN. Most experts believe that the risk of corticosteroids is not worth the possible limited benefit and corticosteroids are usually not recommended. Vaccination of elderly individuals appears to be effective in decreasing PHN as mentioned earlier in prevention.

Related Topics

• Neuropathy, • Pain, • Pain management

Suggested Readings

- Arvin A (2005) Aging, immunity, and the varicella-zoster virus. *N Engl J Med* 352:2266–2267
- Gilden DH, DeMaster BK, LaGuardia JJ, Mahalingam R, Cohrs RJ (2000) Neurologic complications of the reactivation of varicella-zoster virus. *N Engl J Med* 342:635–644
- Gnann JW, Whitley RJ (2002) Herpes zoster. *N Engl J Med* 347:340–346
- Josephson A, Gomert ME (1988) Airborne transmission of nosocomial varicella from localized zoster. *J Infect Dis* 158:238–241
- Oxman MN, Levin MJ, Johnson GR, Schmader KE, Straus SE, Gelb LD (2005) A vaccine to prevent herpes zoster postherpetic neuralgia in older adults. *N Engl J Med* 352:2271–2284
- Wood MJ, Johnson RW, McKendrick MW, Taylor J, Mandal BK, Crooks J (1996) A randomized trial of acyclovir for 7 days or 21 days with and without prednisolone for treatment of acute herpes zoster. *N Engl J Med* 330:896–900

Siblings

Jenice Contreras · Ingrid Vargas

Sibling relationship is a popular subfield in family gerontology. It is estimated that over 80% of Americans have at least one sibling. *Webster's Dictionary* defines sibling as one of two or more individuals having one common parent. Siblings are often individuals' first peer relationships. Social and cognitive learning begins through sibling relationships. Siblings play a huge role in the development of their counterparts and continue to be an intricate part of the individual, even through adulthood.

Siblings share commonalities that make such relationships unique. Some of these commonalities can be attributed to a long history of shared culture, values, experiences, and beliefs. Because of the genetic similarities of siblings, they often experience similar physical characteristics and health conditions such as diabetes, high blood pressure, and heart disease among others. Understanding the family's predisposition to conditions such as dementia and Alzheimer's disease can be very important in detecting early signs of such conditions and accessing preventative health care.

There are different ways in which siblings relate to one another. However it is important to understand that sibling relationships do change from childhood to adulthood and even through the aging process. Sibling interactions are impacted by such factors as gender, birth order, age spacing, and personality traits, and may assume a quality as intimate, congenial, loyal, apathetic, or hostile.

Siblings who engage in an intimate relationship provide assistance to each other. They often times find themselves feeling incomplete without the other. The congenial type relationship is one of closeness and affection. Through adulthood, the siblings maintain contact but do not share the same closeness that characterizes the intimate type of sibling relationship. The loyal relationship is characterized by an allegiance that is based on family cultural norms. Siblings in an apathetic relationship see each other relatively infrequently and have different interests in life, therefore making it difficult to relate to each other; this may be exacerbated during adulthood. The hostile type of sibling relationship is characterized by the existence of negative feelings between the siblings, such as anger and resentment.

Rivalry between siblings is common. This is not necessarily a negative occurrence. Through sibling rivalry, individuals learn to express their needs and wants. They test each others' limits, learn about competition, and speak out to advocate for themselves. On the other hand, sibling rivalry can be a source of trauma to some, such as might occur when one sibling excels at an activity that is a source of difficulty to another. Adults often intervene to resolve disputes and assist siblings in communicating more efficiently. The adults' approach to sibling rivalry plays a critical role in the outcome of the rivalry.

As siblings age, they may confide in each other to a greater extent because they view each other as best friends and often depend on each other as a part of their social network. Research suggest that older adults generally find their sibling relationships rewarding.

Related Topics

- Family relationships, ➤ Social support

Suggested Readings

- Cicirelli VG (1995) Sibling relationships across the life span. Plenum Press: New York
Gold DT (1989) Sibling relationships in old age: A typology. Int J Aging Hum Dev 28(1):32–33
Goode E (1994) The secret world of siblings. US News & World Report 116:44–51

Sigmoidoscopy

Kathleen M. Wolner

Sigmoidoscopy is a type of examination used to screen for colorectal cancer. Colorectal cancer is the second leading cause of cancer deaths. Over 130,000 cases of this occur per year, with more than 50,000 deaths. While other types of cancer can occur in the colon in addition to the common colorectal cancer, including lymphoma, carcinoid, and melanoma, only colorectal

cancer will be discussed here. Colon cancer is almost always treatable if diagnosed early. The factors that increase one's risk of colon cancer include certain types of polyps and other cancers. Colon cancer can also run in families. Ulcerative colitis is another risk factor for colorectal cancer. It has long been felt that diets high in meat, high fat, and low fiber increase the risk of colon cancer. However, research has failed to show that changing to a high-fiber diet prevents colon cancer. If one had colon cancer earlier in his life, then there is an increased risk of developing another colon cancer. Not all polyps are precursors of colon cancer. Specifically, adenomatous polyps have a 10% chance of turning into a cancer after 10 years. Other polyps, called hyperplastic polyps, are simply overgrowth of normal tissue and do not carry any risk of developing into colon cancer.

A sigmoidoscopy is an examination of the lower portion of the colon, called the sigmoid or descending colon. Primary care providers and gastroenterologists perform sigmoidoscopies. The purpose of sigmoidoscopy is to look for early signs of colon cancer. One looks for bleeding, inflammation, growths (or polyps), and ulcers. It is commonly used along with guaiac-based test cards used to look for trace amounts of blood in the stool that cannot be seen with the naked eye. The preparation for a sigmoidoscopy varies. In general, two enemas 2 h before the examination are included as a minimum preparation. More extensive preparations include a clear-liquid diet the evening before and the morning of the test. Clear liquids are defined as “anything that you can see through you can eat,” and that includes fat-free bouillon or broth, gelatin, strained fruit juice, water, plain coffee, etc. Recently, a multidisciplinary panel consisting of representatives from the American Cancer Society, the US Preventive Services Task Force, and others agreed that sigmoidoscopy is appropriate for screening average-risk persons 50 years of age or older. Other options for this age group of average risk include a colonoscopy every 10 years or a double-contrast barium enema every 5–10 years. Flexible sigmoidoscopy is recommended every 5 years in conjunction with three, yearly stool guaiac-based tests. Make sure that you tell your physician if you have developed rectal bleeding, unintended weight loss, or a change in bowel habits so that you can be referred for a full colonoscopy. Blood in your stool or toilet tissue, often attributed to hemorrhoids, should be fully evaluated with a colonoscopy.

Informed consent is obtained before the examination. The risks of the procedure include a feeling of gas, potential bleeding from scope trauma or biopsy and, the most serious complication, perforation, requiring surgery. Perforation is extremely uncommon and occurs in one of every 10,000 examinations. During the examination, the patient lies on his or her left side and the examiner utilizes a mild lubricant to ease insertion of the scope. The examiner inserts the scope 60–70 cm (24–28 in.). It is during withdrawal of the scope that most of the examination takes place because a good view of all colon surfaces can be obtained. Biopsies do not hurt because there are no nerve endings in the colon. However, it is important to tell your physician if you are taking any blood thinners or anticoagulants such as warfarin as they may increase your tendency to bleed after a biopsy.

The normal colon consists of very large circular folds called haustra. When the folds become triangular in appearance this indicates that the examiner has reached the transverse colon, the part that goes across the abdomen. The descending or sigmoid colon is a relatively straight part of the colon in most persons. The colon can be very winding, especially in persons who have had a history of abdominal surgery. In the healing process, scarring can develop that tucks down the colon and creates sharp turns. The endoscopist looks behind the folds for polyps.

Diverticula are protruding sacs (or pockets) that are most commonly seen in the sigmoid colon. They occur after the age of 40 and half of persons older than 60 have them. Only a small percentage of persons have complications from diverticula. Inflamed, infected diverticula are referred to as diverticulitis and imply an inflammation or perforation. The mere presence of diverticula is not a cause for concern. The latter condition, known as diverticulosis, is simply a reason to make sure that one maintains a high-fiber, high-water intake so that the bowels move regularly. When there is a complication, however, it can be very serious.

Polyps are growths in the colon. They can appear as a button, flat and closely adherent to the colon wall, or they can be connected to the wall of the colon by a stalk. Five to ten percent are adenomatous and 10% of these can become malignant over 10 years. They occur in different sizes with the larger being more likely to be cancer. When a polyp is removed during a colonoscopy or sigmoidoscopy, it is examined for the presence of potentially cancerous cells. Colon cancers vary from a

round polyp to an angry cauliflower-shaped bleeding lesion that may wrap around the inside of the colon. Cancers can have a very rough and bloody surface that immediately suggests the cancer diagnosis.

Hemorrhoids are engorged veins in the rectum that are similar to the engorged veins that result in varicose veins on our legs. They can be internal or external and are very painful if they are thrombosed. "Thrombosed" means that there is a clot present that is causing part of this tissue to be starved of oxygen, resulting in severe pain.

Anal fissures can also be found at the time of the sigmoidoscopy. These are very painful tears in the mucosa and one questions whether the patient has an inflammatory bowel disease, as anal fissures can be seen in this bowel disease. Persons who are immunosuppressed, meaning that their immune system is being suppressed for some reason (such as chemotherapy), may also be at risk for anal fissures. Other causes of fissures include syphilis and cancer.

It is very important to be screened for colon cancer and sigmoidoscopy is a very acceptable way of screening normal risk persons. Any problems, such as rectal bleeding, unintentional weight loss, severe rectal pain on defecation, or a family member with colon cancer should be immediately reported to your doctor. The most important message, however, is that in most people there are no symptoms. Early detection is the key to cure.

Related Topics

• Cancer screening, • Colonoscopy, • Colorectal cancer

Suggested Readings

American Academy of Family Physicians 1999 What you should know about flexible sigmoidoscopy. Leawood, KS (2006); www.aafp.org/asp/990115/ap313.html

National Digestive Diseases Information Clearinghouse 2004 Flexible Sigmoidoscopy. Bethesda, MD (2006); www.digestive-niddk.nih.gov/ddiseases/pubs/sigmoidoscopy

United States National Library of Medicine 2006 MedlinePlus, health information for the general public. National Institutes of Health, Rockville, MD (January 13, 2006); www.nlm.nih.gov/medlineplus

UpToDate 2006 Medical information for patients. Waltham, MA;
<http://patients.uptodate.com>

Sjogren's Syndrome

Lori B. Siegel

Sjogren's syndrome (SS) is a serious disorder in which the body fights against its own tear and saliva glands. This autoimmune process causes the body to produce less tears and less saliva, which can lead to complications in both the eyes and the mouth. The frequency of SS increases with increasing age and diagnosis may be delayed because the symptoms occur gradually and increase over time. SS is more common in women than in men.

The classic symptoms of SS are a complaint or sensation of dry eyes or dry mouth. People report that they feel a dry and gritty sensation in the eyes, as if there is sand in them. People try various eye drops without success and often have difficulty wearing contact lenses. Also, people may note that they are constantly thirsty and either carry water with them at all times or they know where all the drinking fountains are at their place of work or in the places where they spend a large amount of time. They also have difficulty swallowing solid foods without taking in liquid at the same time. Patients also have more dental problems such as cavities and tooth loss. They may have problems tasting food and may complain of a burning sensation in the mouth, which can become quite severe. Some patients with saliva problems develop enlarged saliva glands over time and note that they have fullness in their lower face where the saliva glands are located.

The cause of SS is not clear but it is thought that there is a viral trigger in those people who have a genetic predisposition to autoimmune diseases. Because women are affected nine times as much as men, there are theories that hormones may play a role in the development of SS. Sjogren's syndrome (SS) may be a primary condition, independent of any other disease process or condition. More often, however, SS is associated with other autoimmune diseases, commonly rheumatoid arthritis, systemic lupus erythematosus, or other connective tissue diseases. SS is not part of the formal classification of these conditions but a common association. Fulfilling the criteria established by the American College of Rheumatology as summarized below, a diagnosis of SS is having three of the following six items:

1. Ocular (eye) symptoms
2. Oral symptoms
3. Ocular signs such as decreased tear production measured by objective ophthalmologic tests
4. Salivary gland involvement as proven by measuring saliva flow, parotid sialography, or salivary scintigraphy
5. Positive biopsy of minor or major salivary glands
6. Serologic evidence of autoantibodies such as anti Ro/La, ANA, RF

SS may also extend beyond the eyes and mouth as well, although less frequently. Patients may have associated dry skin, decreased sweating, itching and peripheral nerve problems. There may be an associated vasculitis, or inflammation of the blood vessels. Thyroid disease is common in patients with SS. Some patients may have a dry cough as a result of dryness of the airways and decreased mucous production. Patients may also suffer from other joint and muscle aches. The bladder may also become affected, resulting in irritable bladder and decreased frequency of urination. In the aging population, vaginal dryness may be exaggerated and severe. The most serious association is the potential for lymphoma.

The treatment of SS is difficult and it is best that the patient be educated in self-care to avoid complications. Treatment of dry eyes includes tear replacement and topical eye-medications along with oral medications such as pilocarpine. These must be used with caution as many tear preparations may have preservatives in them that can worsen the already irritated eye. Oral hygiene is essential, so frequent dental care is important. Some patients require daily fluoride and antibiotic rinses. Medications that cause oral dryness should be avoided. Sugar-free gum or candy may help promote saliva production. Humidifiers and oral lubricants can be used as well. Swollen parotid or salivary glands may respond well to warm compresses and massage.

Other medications that are used to treat other connective tissue diseases may be successful in SS. Local treatments of the involved area or system are essential. Treatments should be more aggressive if local treatments are insufficient. Pilocarpine may help salivary secretion and oral antifungals may be necessary for secondary infections. If immunosuppressants are used, attention to increased risk of infection is important. Because of the associated increased in lymphoma, this should be monitored as well, especi-

ally with more aggressive treatments. All patients suffering from SS should be given information on their condition and encouraged to learn all that they can, so that they can live better with this difficult condition.

Related Topics

- Autoimmune diseases disorders, ● Rheumatoid arthritis

Suggested Readings

- Arthritis Foundation (2001) Primer on rheumatic diseases, 12th edn. Atlanta, GA
Klippel JH, Dieppe PA (1998) Rheumatology, 2nd edn. CV Mosby, St. Louis, MO
Klippel JH, Dieppe PA, Ferri FF (2000) Primary care rheumatology. Harcourt, London

Skilled Nursing Facility

Kristin A. Cassidy

Skilled nursing facility (SNF) is a type of nursing home that has round-the-clock “skilled” care (care given by professional nursing or rehabilitative staff) available to residents. SNFs can provide either long-term care for a person who is no longer able to care for his or her own needs, or temporary care for someone who has been discharged from the hospital and needs additional assistance with recovery before returning home. Residents of SNFs generally have physical or cognitive impairments which require 24-hours-a-day care or medical needs that require special equipment.

Many large SNFs are divided into smaller units often based on the needs of the residents in that unit. For example, many SNFs have separate units for residents with memory impairments or units specifically for patients who are there only temporarily to recover from surgery or an acute illness. The skilled nursing staff on each unit generally consists of at least one registered nurse (RN) and a few licensed practical nurses (LPN). The RN supervises the unit's staff; assesses the residents' health; develops treatment

plans; administers invasive procedures (such as intravenous fluids); and usually distributes the prescribed medications to the residents. The LPNs provide routine bedside care such as monitoring the patients' fluid intake, catheters, and vital signs; changing dressings; preventing new and treating existing bedsores; preparing and administering injections and enemas; and in some states the LPNs administer prescribed medications. Many SNF units will also have several “unskilled” nursing staff such as state tested nurse assistants (STNAs). These nonprofessional workers help the residents with activities of daily living such as dressing, eating, bathing, and toileting.

In addition to the nursing staff on each unit, SNFs usually employ or have contracts with a variety of other skilled health professionals such as physical and occupational therapists, speech-language pathologists, and audiologists. Many SNFs also have art therapists, respiratory therapists, psychologists, social workers, dieticians, and activities professionals to provide assistance and support specific to each resident's need. Licensed and certified SNFs must also employ a licensed physician as Medical Director and a licensed nursing home administrator.

SNFs must be licensed by the state in which they operate. To receive funding from Medicare or Medicaid, SNFs need to be certified also by the state. According to the American Health Care Association, there were 15,989 certified nursing facilities with a total of 1,435,761 residents in the United States, as of December 2005. On an average each facility had 90 residents. Medicare paid for 12.9% of the patients and Medicaid was responsible for 65.5%.

Unannounced inspections are conducted by official state inspectors every 9 to 15 months to ensure that the certified facilities are up to federal and state standards. Any violations are reported to the facility and a plan of correction is required from the SNF, if it is not in compliance with the standards. SNFs can also be fined for serious violations and have their certification taken away if corrections are not implemented within a specified amount of time. The results of these inspections are available to the public and are easily accessible on the internet.

Medicare only covers up to 100 days of skilled care in a Medicare certified SNF after a qualifying hospital stay of at least 3 days. If skilled nursing care is still required after using up the Medicare benefits or if a patient has not had a qualifying hospital stay before entering the SNF, the cost is usually paid for by the

patient or their family using savings and income, by Medicaid, or by long-term care insurance.

The rate for one day in an SNF averages from \$110 to \$210. That can add up to \$40,000–75,000 per year. Although some people are able to cover the cost of a nursing home out of their own pocket, most people need to find alternative ways to pay for the care.

Sixty percent of patients who enter a nursing home start off paying for it themselves; but with the high cost of long-term care, a person's life savings can quickly be exhausted. Medicaid pays for over 40% of the nation's long-term care. Many SNFs have a specified number of Medicaid beds. Since Medicaid is a state-administered welfare program there are limits for the maximum income and assets a person can have. Therefore, some people "spend-down" in order to qualify or switch to Medicaid coverage, once they have spent their assets on long-term care.

A more recent trend in paying for SNFs is by using long-term care insurance. The amount and services covered by long-term care insurance vary by policy. Since there are not any asset or income qualifications, personal savings, investments, property and family inheritance do not need to be spent down. Also, unlike with Medicaid, SNFs do not set aside a specified number of beds for residents covered by long-term care insurance and do not need to be specially certified by the government to accept long-term care insurance. Therefore, patients using long-term care insurance have more options available when shopping for an SNF.

Once in a SNF, patients and their families should keep in mind that each state is required to have a long-term care ombudsman available through the state office on aging. The ombudsman can be called on to investigate and help resolve any quality of care issues that have not been satisfactorily attended to by the facility's licensed administrator.

Related Topics

- Activities of daily living, ● Housing, ● Long-term care, ● Long-term care insurance, ● Medicaid, ● Medicare, ● Nursing home, ● Rehabilitation

Suggested Readings

Jones A (2002) The national nursing home survey: 1999 summary. National center for health statistics. Vital Health Stat 13(152): 1–116

Suggested Resources

- American Health Care Association Consumer information about long-term care—guide to planning, preparing, and paying for long term care; <http://www.longtermcareliving.com/>
- American Health Care Association—Health Services Research and Evaluation; http://www.ahca.org/research/oscar_patient.htm
- CarePathways.com's Nursing Home Checklist; <http://www.care-pathways.com/checklist-nh.cfm>
- Centers for Medicare & Medicaid Services, "Medicare coverage of skilled nursing facility care" booklet; <http://www.medicare.gov/publications/pubs/pdf/snfc.pdf>
- Medicare.gov Nursing Home Comparison tool—lists facilities by geographic location, whether they are covered by Medicare and Medicaid, and the results of their most recent inspection; <http://www.medicare.gov/Nhcompare/Home.asp>
- National Long Term Care Ombudsman Resource Center; <http://www.ltcombudsman.org/>

Skin Care

Paradi Mirmirani

The skin is the largest and most exposed organ of the body. Its functions are complex and include serving as a physical and immunologic barrier to external substances, retaining water, regulating body temperature, and acting as a sensory organ. The skin is also an integral part of our self-image and is often a focus of cosmetic and beautifying agents.

Because the skin is exposed to the environment, it is susceptible to damage over time. Ultraviolet rays from sunlight and smoking are the most common causes of environmental skin damage, thus sun protection is one of the most important parts of a skin care regimen. Research has shown that exposure to ultraviolet light can cause various skin cancers, the most common being basal cell cancer and squamous cell cancer. A less common but much more dangerous form of skin cancer, malignant melanoma, may be linked

to sunburns in childhood. In addition, sunlight exposure causes dramatically accelerated skin aging, including wrinkling, dryness, visible blood vessels, and changes in pigmentation. Healthy skin-care and habits can decrease this cumulative injury. Recommendations include the following:

- Minimizing sun exposure during peak hours (10 a.m.–2 p.m.)
- Wearing sun-protective clothing, hats, and sunglasses
- Using a broad-spectrum sunscreen (UV-A and UV-B protection) with a sun-protection factor (SPF) of greater than or equal to 15
- Avoiding sunlamps and tanning beds

These habits are most beneficial when started in childhood, as statistics show that in more than one half of a person's lifetime ultraviolet exposure occurs during childhood and adolescence. However, it is never too late to incorporate sun protection into a skin care regimen. Medical treatments for reversing some of the effects of sun damage are available and include topical creams, chemical peels, and laser therapy.

Other components of a skin care regimen need not be complicated. Mild, nonperfumed soaps are usually recommended for cleansing the skin, with a moisturizer applied as needed (consider products that have a built-in sunscreen). As we get older, our skin has fewer sweat and oil glands and is less efficient in retaining water, which can lead to dryness and itching. Dry skin can be worsened by frequent bathing or showering, and may be more sensitive to soaps, cosmetics, and certain fabrics. Frequent use of emollients and avoiding aggravating factors are basic measures for dry skin care. For those with oily or acne-prone skin, facial moisturizers are usually not needed and care should be taken to choose cosmetics that are oil-free and noncomedogenic.

Related Topics

- Body image, ● Liver spots, ● Skin disorders,
- Skin, hair and nails changes, ● Wrinkles

Suggested Readings

Habif TP (ed) (1996) Clinical dermatology, 3rd edn. Mosby-Year Book, Inc., St. Louis, MO

Suggested Resource

American Academy of Dermatology (www.aad.org)

Skin, Hair, and Nail Changes

Paradi Mirmirani

Skin, hair, and nail changes are commonly seen with advancing age. Some of these changes are physiologic, while others are attributable to genetics or to environmental exposure. Physiologic changes that occur in the skin include thinning or transparency of the skin, thinning of the fatty layer, less elasticity of the collagen fibers, dry skin, decreased sweating capacity, slowed or decreased hair growth, and thinning or ridging of the nails. Common manifestations include skin wrinkling, loss of firmness, easy bruising, and skin itching.

Skin Disorders

Skin disorders can be broadly categorized as either rashes or as growths. Rashes are often a result of skin inflammation and can be precipitated by a wide variety of causes, the scope of which is beyond this text (the reader is referred to the Suggested Reading for further

Skin Tumor Types

Benign	Premalignant	Malignant
Seborrheic keratoses	Actinic keratoses	Basal cell carcinoma
Skin tags		Squamous cell carcinoma
		Malignant melanoma

information.) Growths, or tumors are a frequent finding in older adults, the most common tumors are outlined below:

Seborrheic keratoses are extremely common skin tumors, usually affecting people older than 50 years but also seen in young adults. These lesions usually arise on the trunk, face, and upper extremities and can range in color from tan to red or even black. Their diagnosis is often made based on a clinically “stuck-on” appearance. The tendency for seborrheic keratoses may be inherited in an autosomal dominant fashion. No treatment is necessary for most lesions.

Skin tags are outgrowths of normal skin. Twenty-five percent of the adults have skin tags, and there is a familial tendency for these lesions. They usually occur at sites of friction such as the axillae (armpits), neck, underneath the breasts, and in the groin area. Treatment is indicated only if lesions are irritating or a patient desires removal for cosmetic reasons.

Actinic keratoses are common premalignant lesions of the skin, resulting from chronic, cumulative sun exposure and occurring most commonly in fair-skinned people on sun-exposed skin sites including the face and the dorsal hands. Actinic keratoses are characterized by an irregular shape and scaly or “sandpaper” texture. If left untreated, some actinic keratoses may progress to become cancerous. Treatment options include liquid nitrogen or prescription medications aimed at destroying the premalignant cells.

Basal cell carcinoma is a malignancy of the basal cells in the epidermis (skin). It is the most common human malignancy with approximately 750,000 new cases in the United States each year. Basal cell carcinoma occurs more commonly in men, almost exclusively in whites, and most frequently between the ages of 40 and 80. Predisposing factors include chronic ultraviolet sunlight exposure, arsenic, and ionizing radiation. Basal cell cancers are usually noticed as a new growth in sun-damaged skin that is skin colored, sometimes pearly, and has a tendency to bleed. Most basal cell tumors spread locally and do not metastasize (spread to other parts of the body). Treatment usually involves surgical excision but is influenced by size and location of the tumor.

Squamous cell carcinomas are malignant tumors of keratinocytes, the main cell type that comprises the skin. Squamous cell cancer occurs most commonly in white men older than 55 years. Other predisposing factors include ultraviolet sunlight exposure, old burn scars, sites of chronic inflammation, radiation therapy, arsenic, immunosuppression, and smoking (lip lesions). A squamous cell carcinoma commonly appears as a new growth that may be scaly and has a

tendency to bleed. Treatment typically involves excision of the lesion.

Melanoma is the malignant proliferation of pigment producing cells called melanocytes. Malignant melanoma represents 3% of all cancers, with tens of thousands of new cases in the United States annually. Representing 1–2% of all cancer-related deaths, the increase in the melanoma mortality rates is second only to lung cancer. Risk factors for developing malignant melanoma include fair hair and light eyes, extensive sun exposure, history of sunburns in childhood, multiple irregular moles, or a family history of melanoma. However, any patient with a history of change in a long-standing pigmented lesion or a new lesion with suspect features should alert the clinician to the possible diagnosis of melanoma. A mnemonic to remember suspect features of melanoma is

A = asymmetry

B = borders irregular and blurred

C = color change or variable pigmentation

D = diameter greater than 6 mm

E = elevation of previously flat lesion

Diagnosis is based on excisional biopsy (surgical removal of the lesion) and characteristic histologic (microscopic) findings. Treatment of melanoma depends on the stage of the tumor: excisions are performed for thin lesion whereas thicker tumors may require adjuvant therapy.

Hair Disorders

The portion of hair that is seen is called the hair shaft. That which is below the surface of skin is the follicle. During our lifetime, each hair follicle undergoes repeated cycles of growth, rest, and regeneration. Hair loss can occur due to disturbances of the hair cycle, damage to the hair shaft, or disorders affecting the follicle.

Disturbances of the hair cycle Normally, the majority of scalp hair is in the growth phase. A small percentage of hairs in the resting phase are shed each day (100–200 hairs shed daily). Under certain circumstances, a higher percentage of hairs enter the resting phase, and a person may notice a sudden increase in hair shedding. Common causes include high fever, childbirth, severe infections; severe “flu,” severe chronic illness, major surgery, thyroid disorder, crash

diets, inadequate protein intake, and certain drugs. The shedding often starts months after the inciting cause but will stop after several weeks if the offending cause is removed or corrected.

Damage to the hair shaft Hair is composed primarily of the protein keratin, which is the same substance that forms fingernails and toenails. Damage to the hair shaft by improper cosmetic techniques can cause hair breakage. There is little damage from normal dyeing, bleaching, waving, or straightening. However breakage can occur from too much tension during waving, from waving solutions left on too long or improperly neutralized, from waving and bleaching on the same day, or from too-frequent hair treatments. Hair breakage will stop if the cosmetic procedure is stopped and the hair is handled gently, but hairs already broken cannot be mended.

Disorders affecting the follicle Hereditary hair thinning, or androgenetic alopecia, is the most common form of hair loss in humans. This condition is also known as male-pattern hair loss or common baldness in men and as female-pattern hair thinning in women. Onset may occur in either sex at any time after puberty. It is estimated that half of the population experiences hereditary hair loss by age 50. The cause of hereditary hair-thinning is a gradual diminution of the hair follicle, which occurs under the influence of androgens. The smaller hair follicle results in a finer and shorter hair-shaft.

Nail Disorders

The hard nail-plate is made up of compact keratin, which is synthesized by the nail matrix, a structure located directly underneath the cuticle. The cuticle provides a protective seal for the matrix, thus any damage or trauma to the cuticle or nail matrix can affect the nail plate, often manifesting as white spots or horizontal ridges. Vertical ridging and slowed growth of the nail plate are common findings seen with advancing age and are a result of physiologic changes in the matrix. Alterations in the nails can also be a reflection of our internal health and a physical examination will typically include a close inspection of the nails. A common example is the finding of pale nails in a person with anemia.

Related Topics

- Alopecia, ➤ Body image, ➤ Cancer, ➤ Hair replacement, ➤ Melanoma, ➤ Nail and hand care, ➤ Skin care, ➤ Wrinkles

Suggested Readings

- Freedberg I, Eisen A, Wolff K, et al (eds) (1999) Fitzpatrick's dermatology in general medicine, 5th edn. McGraw-Hill, New York, pp 769, 1464
Goldstein BG, Goldstein AO (1997) Practical dermatology, 2nd edn. Mosby, St. Louis, MO, pp 128–157
Gummer CL (2002) Cosmetics and hair loss. *Clin Exp Dermatol* 27(5):418–421
Price VH (1999) Treatment of hair loss. *N Engl J Med* 341:964–973

Suggested Resources

- Aging skin net; www.skincarephysicians.com
American Academy of Dermatology; www.aad.org
North American Hair Research Society; www.nahrs.org

Sleep Disorders

John Sanitato, Jr.

Disturbed sleep is one of the most common presenting complaints in modern medicine. Ineffective sleep hygiene is very often the cause, but a large number of specific sleep disorders can be present as well. Sleep hygiene refers to the sum total of the waking behaviors that affect the quality and quantity of a person's sleep.

The comprehensive assessment of a potential sleep disorder includes a thorough history of sleep dysfunction, a review of sleep hygiene, a medical and mental health history, a review of current medications, an assessment of drug and alcohol use, a physical examination with targeted laboratory testing, and an overnight sleep study known as a polysomnogram. Polysomnography is the systematic evaluation of brainwave, muscular, ocular, and respiratory function during sleep. The study is done across a typical night's sleep, and may reveal apneas (periods when breathing is absent), hypopneas (periods of slowed respiration), or abnormal bodily movements.

The latency (duration from bedtime to sleep onset), continuity, efficiency, and architecture of sleep are assessed. Sleep architecture refers to the duration of, and transitions between, the unique physiologic stages of sleep.

Five stages are identified. One stage of rapid eye movement (REM) sleep and four stages of non-REM (NREM) sleep, which are labeled stages 1 through 4, are noted. Stage 1 NREM is relatively brief and signifies the transition from a waking state to sleep. Stage 2 NREM, significant for “sleep spindles” and “K complexes” on the electroencephalogram (EEG), comprises up to 50% of total sleep time. Progressively deeper stages of sleep—stages 3 and 4, or “slow-wave” sleep—occupy up to 20% of sleep time, while REM sleep, in which dream activity and loss of muscle tone occur, occupies up to 25% of sleep time. REM sleep occurs roughly every 90 min, and the duration of REM periods increase across the night. NREM stages 3 and 4 are more prominent during the first half of the night, and tend to deteriorate in duration and frequency as we age. Perhaps as a result, up to half of all Americans over age 65 may have a diagnosable sleep disorder.

There are a number of typical changes in sleep pattern seen with aging. Slow wave sleep decreases on average from 20% to less than 10% of total sleep time by the age of 70, and both REM amount and REM latency also decline. Total sleep time and sleep efficiency (amount of time in bed actually spent sleeping) both decrease as well. Snoring does appear to increase with age, however the significance of this is unclear.

The treatment of all sleep disorders includes a thoughtful review of ideal sleep hygiene. The bed is identified as a sanctuary for sleep and sex only. Reliable daily sleep and wake times should be established and adhered to, and daytime napping minimized to 30 min or less. Although the ideal duration of nightly sleep varies between individuals and by age, a rough goal is 6–7 h per night for most adults, with fewer hours needed with aging. Avoiding rigorous exercise or hot showers close to bedtime is also a helpful rule. If unable to fall asleep after 45 min, one should spend 30 min or so occupied in an activity away from the bedroom and then try to retire again. Caffeine and tobacco should be avoided within 4 h of bedtime, as should meals and significant fluid intake. Alcohol has for many a soporific, or sleep-inducing, effect but will reliably decrease the quality and continuity of ensuing sleep. The elderly as a group are thought to be at an increased risk for suboptimal sleep hygiene due to lifestyle changes

(retirement, nursing-home settings) and degenerative or chronic diseases (often resulting in pain or sedentary living).

Sleep disorders can be divided into four main groups. There are those caused by mental disorders, medical conditions, or substances (use of or discontinuation from), which are termed “secondary” sleep disorders. Additionally, there is the fourth group known as the “primary” sleep disorders, which include the dyssomnias and the parasomnias. Dyssomnias are disorders of the onset or maintenance of sleep, and parasomnias are disorders involving abnormal behaviors associated with sleep. Parasomnias include conditions such as nightmares, sleep terrors, REM sleep behavior disorder, bruxism (teeth-grinding), enuresis (bedwetting), somnambulism (sleepwalking), and somniloquy (sleptalking). Another parasomnia worth noting here is REM-sleep behavior disorder, in which the lack of muscle tone normally seen during REM sleep is lost, and disorganized, possibly injurious behaviors can occur in the deeply asleep and dreaming subject. This syndrome can be seen as a prelude to, or a feature of, Parkinson’s disease or dementia with Lewy bodies.

Mood and anxiety disorders commonly perturb sleep. Sleep disorders secondary to other mental disorders are more common in women than in men. Up to 50% of individuals with chronic insomnia may have a diagnosable mental disorder responsible for the sleep disturbance. Major depression, bipolar disorder, schizophrenia, adjustment disorder, and anxiety disorders (panic disorder, generalized anxiety disorder, post-traumatic stress disorder) typically involve an alteration in the timing and amount of sleep. In major depression for example, sleep latency is prolonged, REM latency is decreased, and REM sleep becomes denser. Slow-wave sleep is reduced as well. Unfortunately, there is a small but significant risk that the medications used to treat these disorders may also potentiate disturbances in sleep, such as insomnia, hypersomnia, vivid dreams, nightmares, or bruxism.

Intoxication or withdrawal from drugs and alcohol may cause significant sleep disruption. Alcohol intoxication increases slow-wave sleep and suppresses REM, yielding fitful sleep with increased dream activity. Its use may also worsen preexisting sleep apneas. Withdrawal from chronic alcohol use tends to cause a loss of slow-wave sleep and an increase in REM sleep. The use of amphetamines, cocaine, or caffeine will increase wakefulness and cause insomnia acutely, with hypersomnia or fatigue ensuing during withdrawal. Opioids,

sedatives, and many antianxiety medications are acutely sedating, but provoke insomnia when used chronically, as tolerance develops. As with alcohol, a rebound in REM-sleep amount may be seen after discontinuation of these agents.

Dozens of medical conditions may derange sleep. Common culprits include infections, dementia, arthritis, gastroesophageal reflux disease (GERD), epilepsy, endocrine disorders, cardiopulmonary disease, headaches, and neurodegenerative disorders. Women are at greater risk during pregnancy and postmenopaually. In hospitals and nursing homes, delirium is a very common cause of sleep disruption. A delirium is an acute confusional state due to an acute medical condition or the use of a substance. The syndrome is characterized by impairments in attention, concentration, cognition, and perception. Sleep is often restless, nonrestorative, and exhibits a pattern of day–night reversal.

Returning to the primary sleep disorders, we will focus on the dyssomnias, as a more detailed discussion of the parasomnias is beyond our scope here. The more common dyssomnias include primary insomnia, primary hypersomnia, sleep apnea, restless legs syndrome, circadian rhythm sleep disorders, and narcolepsy. Primary insomnia and hypersomnia can often be resolved with better sleep hygiene and lifestyle modification.

Sleep apnea may be either central or obstructive in type. Central sleep apnea is rare and involves diminished respiratory drive at the level of the brainstem. Obstructive sleep apnea (OSA) is much more common, and affects 1–10% of the population. OSA is caused by the mechanical obstruction of ventilation by increased palatal and pharyngeal tissues. Obese persons are at greater risk. Excessive daytime sleepiness, morning headaches, loud snoring, and apneas observed by sleeping partners can aid in diagnosis, which is confirmed by polysomnography. Diagnosis often occurs between 40 and 60 years of age. Untreated OSA carries a risk of increased mortality. Treatment involves weight loss, smoking cessation, control of blood pressure and cholesterol reduction, and nocturnal ventilation with nasal continuous positive airway pressure (CPAP). Surgery to reduce posterior palatopharyngeal tissues has not been routinely helpful. Studies suggest that rates of sleep apnea increase significantly by age 65 (perhaps as high as 30% at age 70), although treatment may be less necessary than in younger patients with clear obstructive apneic disease. Older adults with apnea but without subjective sleep disruption may not require treatment.

Restless legs syndrome (RLS) involves random, repetitive irregular movements of the feet and legs, and unpleasant aches and pains sensed deeply in the lower extremities. The discomfort often mandates walking or rubbing of the legs by the sufferer for temporary relief. The symptoms occur in the evening and during earlier phases of sleep, and may respond to dopamine agonist medications, tricyclic antidepressants, or opiate analgesics. Diabetes, kidney dysfunction, peripheral nerve disorders, pregnancy, anemia, and medications are all associated with RLS. Periodic limb movement disorder is a similar syndrome that involves repetitious involuntary movements, which intrude upon normal sleep maintenance and cause nonrestorative sleep and excessive daytime sleepiness. RLS and OSA are the two most common primary sleep disorders in the elderly.

Circadian rhythm sleep disorders include jet lag, shift work, and delayed sleep phase disorders. Jet lag is appreciated when people travel two or more time zones, typically west to east, and subsequently have difficulty advancing their sleep schedule. Exposure to light may help to delay, and the use of sedative-hypnotic medicines may help to advance, sleep onset. Shift work disorders occur when work schedules are advanced by one shift (moving from days to evenings). Delayed sleep phase disorders result when the onset of sleep is intentionally delayed because of lifestyle concerns and the ensuing normal sleep duration causes social or occupational dysfunction the following day.

Daytime sleep attacks, cataplexy (brief episodes of loss of muscle tone, often triggered by intense emotion), hallucinations occurring during the sleep–wake transition, and sleep paralysis, form the core symptoms of narcolepsy. Onset is typically during adolescence, and genetic vulnerability plays a strong role. The disorder is rare, occurring in less than 1 in 1000 persons, and treatment is aimed at maintaining daytime wakefulness and consolidating restorative sleep at night. Amphetamine stimulants and the non-amphetamine modafinil can promote wakefulness by day, and sedative medications may help reorder nighttime sleep.

Treatment strategies are diverse, as one can detect from the multiple causes of sleep impairment seen in clinical practice. Optimal sleep hygiene is vitally important. Underlying medical, neurological, and psychiatric conditions should be identified and treated, and offending medications or substance use stopped. Sedative medications should only be used whenever absolutely necessary and for the shortest possible durations.

Benzodiazepine sedative-hypnotics such as lorazepam, diazepam, or alprazolam carry with them a significant risk of adverse effects such as slowed respiration, confusion, unsteadiness and falls, memory dysfunction, and the risk of dependence with chronic use.

Related Topics

- ⦿ [Alcohol use](#), ⦿ [Alzheimer's disease](#), ⦿ [Delirium](#),
- ⦿ [Depression](#), ⦿ [Insomnia](#), ⦿ [Mental illness](#),
- ⦿ [Parkinson's disease](#), ⦿ [Sleep hygiene](#)

Suggested Readings

- American Psychiatric Association (2000) Diagnostic and statistical manual of mental disorders, 4th edn. Text revisions (DSM-IV-TR). American Psychiatric Association, Washington, D.C.
- Barthlen GM (2002) Sleep disorders [Review]. *Geriatrics* 57:34–39
- Coffey CE, Cummings JL (2000) Textbook of geriatric neurology, 2nd edn. American Psychiatric Press, Washington, D.C.
- Hoch C, Reynolds CF III, Monk TH et al (1990) Comparison of sleep disordered breathing among healthy elderly in the seventh, eighth, and ninth decades of life. *Sleep* 13:502–511
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Sleep Hygiene

Phillip Dines

Assuming that underlying causes of sleep disturbance have been addressed from neurological, psychiatric, and medical causes, and acute stressors are not an immediate cause, then sleep hygiene is an important consideration that should not be ignored. Even in the case where there are other issues at play, as just enumerated, sleep hygiene still needs to be applied appropriately.

What is sleep hygiene? This refers patterns of behavior and attitudes about sleep for a given person. Probably one of the most significant factors is the misunderstanding that surrounds sleep. There are often significant maladaptive behaviors that can arise when a person develops sleep disturbances. This leads to a negative spiral that tends to exacerbate the symptoms

that results in the inability to sleep, or insomnia. Underlying this problem are misconceptions about sleep. Therefore, it is imperative, at the outset of helping a person with sleep issues, to educate them about their problem. This involves understanding that sleep is a natural process. When known pathology has been ruled out, it is important to reassure the suffering person that sleep will occur.

Accordingly under these circumstances, insomnia, for example, occurs when an individual undermines or interferes with one's own sleep. This occurs as the result of factors that are under a person's immediate control. These issues require adaptation to external factors or modification of those factors.

Factors under a person's direct control involve making a choice about what times a person chooses to sleep. It is not advisable, under most circumstances, to take naps greater than one-half hour during the day if one expects to sleep at traditional times at night. Avoiding vigorous activities or eating substantially close to anticipated times of sleep are steps that can help with insomnia. Avoiding stimulants such as caffeine are also important. It must be understood that forcing oneself to sleep is a common misconception. Going to bed only when sleepy, not when arbitrary times are chosen, needs to be appreciated. The tendency to over-control sleep instead of learning to work with an individual's sleep needs flexibility, without anxious overlay or self-induced stress, and is critical to good sleeping habits. Treatment needs to be directed toward the development of behaviors and adaptations to sleep needs that are flexible.

Accordingly, it is important that the effects of external factors on sleep need to be understood and help affected people to negotiate these issues. With more challenging issues, psychotherapy may be indicated. The anticipation of going into a job or endeavor the next day can contribute to enough anxiety and the ability to sleep becomes very compromised. Making the necessary changes could be difficult. Sometimes being made aware of the cognitive connections is enough, other times more work may be necessary to be able to adapt to changes required.

Chronic sedative use in the absence of applications of these principles is not helpful and counter-productive. In fact, chronic sedative use is usually a sign of underlying issues, as previously discussed at the outset, that have not been addressed.

Regarding the geropsychiatric population, the incidence of almost all sleep disorders increases with age. The

major categories of sleep disorders can be characterized by disorders of sleep initiation and maintenance, excessive daytime sleepiness, and disorders of circadian rhythm. Apart from this, there is a global change in sleep with aging. There is an overall reduction in sleep quality and a lowering of the arousal threshold. Further, changes in vital functions have significant effects upon sleep. In addition, loss of significant activities has a powerful effect on sleep. Unplanned naps or using sleep to fill time results in marked effects on circadian rhythms, resulting in many frustrating hours of wakefulness, just lying in bed at night. Sleep hygiene principles then become exquisitely germane. This involves increasing activity and new options with time management that can be challenging, but powerfully effective when successfully implemented.

In the geriatric population, misconceptions about sleep are the first targets of sleep hygiene intervention. This is done primarily through education and structure to dispel ideas such that all people need to get 8 h of sleep a night and that in the aged, sleep problems cannot be corrected or that pharmacological management is the first or only meaningful intervention. Rather, nonpharmacological management would be the preferred approach. In this regard, behavioral interventions are diverse and valuable resources. They include relaxation therapies, cognitive therapies, and treatments with goals of addressing specific disruptive or dysfunctional sleep habits. Stimulus control therapy, as developed by Bootzin, promotes the curtailing of daytime napping and enforces a consistent sleep-wake schedule. Elimination behaviors that are incompatible with sleep is a core of this approach. This involves instructions to go to bed only when sleepy, to establish a regular wake-up time, not to remain in bed when not sleepy, and to avoid sleep-incompatible behaviors in bed. Sleep-incompatible behaviors in bed include reading, watching TV, eating, worrying, or other counterproductive behaviors.

Furthermore, as older people have a reduced sleep drive and therefore they have a greater propensity to spend excessive time in bed, so interventions to reduce the amount of time set aside for nocturnal sleep time is another nonpharmacological intervention. This involves the individual keeping a sleep log followed up by calculating the average sleep time and then setting time-in-bed targets that are adjusted over subsequent weeks. The goal is to minimize the time in bed when the older person is not sleeping. This is an example of sleep restriction therapy.

Research indicates that stimulus control and sleep restriction therapies are more effective than most other nonpharmacological interventions. Further, behavioral therapies are comparable with pharmacological interventions for short-term treatment effects but in the long term, benefits are more sustained with fewer side-effects. Combination therapies of stimulus control, sleep restriction, and cognitive behavioral have been promising.

Sleep hygiene involves education and techniques of adaptation that reflect appropriate management of direct and indirect factors that affect sleep function. It is critical to understand the multidimensional nature of sleep hygiene to implement it successfully.

Related Topics

- Depression, ➤ Insomnia, ➤ Sleep disorders

Suggested Readings

- American Sleep Disorders Association (1997) The international classification of sleep disorders: Diagnostic and coding manual, rev edn. American Sleep Disorders Association, Rochester, MN
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Smoking

Nicoleta Coconcea

The most prevalent form of nicotine addiction in the United States is cigarette smoking, involving over 25% of the adult population. This figure represents a gradual, but substantial decline from 42% in 1965. The scientific literature today clearly establishes nicotine as a powerful drug of addiction, with distinct biological effects. Cigarette smoking was identified 40 years ago by the Surgeon General as a leading preventable cause of death and disability, and a serious health and economic burden to the society. There are multiple programs for smoking cessation in adult and adolescent populations, with much less attention being given to older smokers. The fastest growing segment of the US population is older adults 65 years and older, making up 12% of the entire population (and totaling almost 40 million). Overall, smoking rates continue to decline for adult populations. However, smoking prevalence is consistently higher among Blacks than Whites, higher in non-Hispanics than Hispanics, higher in people with less education, and the differences between men and women are narrowing.

Cigarette smoking is a significant contributor to general mortality, with more than 400,000 deaths each year (20% of total US deaths) caused by illnesses attributable to smoking. Cigarette smoking significantly increases the risk of cardiovascular disease (e.g., stroke, sudden death), chronic respiratory diseases (asthma, chronic bronchitis, chronic obstructive pulmonary disease), lung cancer, and other forms of cancer (e.g., mouth, pharynx, larynx, esophagus, stomach, pancreas, uterus, cervix, kidney, ureter and bladder). The smoking habit is also associated with increased risk for vascular disease (stroke, peripheral vascular disease), gastrointestinal disease (peptic ulcer, gastroesophageal reflux), and osteoporosis.

Only 9% of adults 65 years and older smoke, but 22% of adults between 45 and 64 years of age are current smokers, a significant concern to the health care system in the near future. Smoking cessation programs should involve in particular this fast growing segment of the population. The absolute risk of dying prematurely due to smoking increases with the age of the smoker. Excess mortality from all causes of death increases with the age of the smoker and the total years of smoking. Research shows that the mechanism by which smoking carcinogens produce cancer is the production of free radicals. A second mechanism is via DNA modification. Free radicals are unstable molecules that try to replace its missing electron by taking

it from other compounds in order to regain stability. To prevent free radical damage, the body has a defense system of antioxidants (vitamins E and C). The body can normally manage free radicals, but if antioxidants are unavailable or if the free-radical production is excessive, permanent damage from their reaction with DNA or the cell membrane occurs. Evidence suggests that free radical-induced damage is more substantial in older smokers than in young ones, with elderly women being the most susceptible to tobacco carcinogens.

The evident conclusion is that, overall, the elderly are more susceptible to the dangers of smoking. Older smokers have higher rates of cardiovascular and cancer mortality than their nonsmoking counterparts, and have a demonstrated decline in quality of life. Smoking aggravates existing diseases and can interact adversely with the efficacy of many medications, further increasing the medical burden for the elderly, the population segment with the highest medication use. In the elderly, the following associations were found to be significantly related to patterns of behavior: heavy smoking was associated to long-term smoking, living with another smoker or socially interacting with other smokers reinforced smoking, male smokers had increased risk for impairment in mobility and high life stress, and smokers attended church-related activities less frequently.

In terms of motivation, studies show that older smokers were more likely to smoke due to long-term formation of an automatic stress-reducing habit, but obtained less pleasure from smoking than younger smokers. Older smokers also report that smoking helps them concentrate and sustain attention over longer periods of time, so there may be potential perceived cognitive benefits. Benefits of smoking cessation are tremendous for men and women of all ages according to the 1990 *Report of the Surgeon General*. In the elderly with existing conditions or disease states, quitting smoking has been shown to reduce further impairment and disability. The extent of the reduction in risk depends on the total years of smoking, the number of cigarettes smoked per day, and the presence or absence of disease at the time of quitting. Smoking cessation has proved to reduce the risk of lung cancer mortality at any age, including old age. Older smokers who stopped smoking for 5 years reduced their cardiovascular mortality to that of nonsmokers. In general, the decline in risk of all-cause mortality begins

shortly after quitting and continues for about 10–15 years, eventually approximating the mortality risk of never-smokers.

In summary, there is overwhelming evidence that smoking cessation is tremendously beneficial, yet people continue to smoke. A key characteristic of nicotine addiction is repetitive self-administration due to the reinforcing effect of the drug. Significantly, more effort should be put forth by health care professionals in outreach and counseling on smoking cessation and abstinence programs for all their patients, including the elderly. The old belief that there is little benefit to smoking cessation in the elderly or that the elderly are less susceptible to the hazards of smoking has no place in modern medicine.

Related Topics

- Addiction, ● Cancer, ● Cardiovascular disease,
- Harm reduction, ● Health promotion, ● Oral health

Suggested Readings

- Agency for Health Care Policy and Research (1996) Smoking cessation clinical practice. *J Am Med Assoc* 275:1270–1280
- Burns DM (2000) Cigarette smoking among the elderly: Disease, consequences and the benefits of cessation. *Am J Health Promot* 14(6):357–361
- Centers for Disease Control and Prevention (2003) Cigarette smoking among adults—United States 2001. *MMWR* 52(4):953–956

Suggested Resources

- Centers for Disease Control and Prevention How to Quit Useful resources to quit smoking. Atlanta, GA (November 8, 2005); <http://www.cdc.gov/tobacco/how2quit.htm>
- U.S. Department of Health and Human Services Tobacco Cessation—You Can Quit Now!, Washington, D.C.; <http://www.surgeongeneral.gov/tobacco>

Social Security Benefits

Janet L. Lowder · Mary B. McKee

Hubert Humphrey observed that “The moral test of government is how it treats those who are in the dawn of life, the children; those who are in the twilight of life, the aged; and those who are in the shadows of life, the sick, the needy and the handicapped.” According to the Social Security Administration, the Social Security Act aims to provide for the material needs of individuals and families, protect aged and disabled persons against the expenses of illnesses that may otherwise use up their savings, keep families together, and give children the chance to grow up healthy and secure. Social Security benefit programs are designed to make all of us feel and be more socially secure. The Social Security Act created various federal and state benefit programs commonly known as Social Security retirement benefits (SSRB), Social Security disability insurance (SSDI), Supplemental Security Income (SSI), Medicare, and Medicaid.

Entitlement to SSRB and SSDI programs is earned through Federal Insurance Contributions Act (FICA) paycheck contributions. The worker may consider his or her FICA contributions as insurance premiums on a policy that will entitle him or her to future benefits, even though today’s workers are paying for today’s beneficiaries. Other programs, like SSI and Medicaid, are “need-based” or “means-tested,” meaning that an individual must have low income and assets to qualify.

Although the means-tested SSI benefit for noninsured disabled and elderly people is approximately \$603 per month for 2006, the Social Security retirement or disability benefit may be higher, as high as \$2,000 or so per month depending on age of retirement, plus auxiliary benefits for dependent children, depending on how much the worker earned and contributed to the system during his or her working years. Various offsets may apply (workers’ compensation, veterans’ benefits) to preserve the notion that working should always be more financially attractive than drawing disability benefits. If the Social Security amount is less than the SSI amount, the individual may be eligible for both “concurrent” benefits.

To attain “insured status” or become vested in the Social Security retirement or disability insurance system, a worker must generally have worked 20 out of the last 40 quarters, or 5 of the last 10 years. “Quarters of coverage” are now known as “credits,” but whatever the updated term may be, one may want to know, at

any given point in life, whether he or she is “insured” or not. As one plans for the future, or reflects on the past, keep in mind that over time a number of “zero years” can reduce the amount of retirement benefits available on one’s work record, as opposed to that of a wage-earning spouse, or divorced spouse.

Social Security retirement and disability benefits are based on earnings averaged over most of an individual worker’s lifetime. For determining retirement benefits, actual earnings are first adjusted, or indexed, to account for changes in average wages since the years the individual received those earnings. Next, average monthly indexed earnings during the 35 years in which the individual earned the most are calculated. Social Security then applies a formula to these earnings and arrives at the individual’s basic benefit, or “primary insurance amount,” the amount the individual receives at her full retirement age. This benefit amount, however, increases each year to protect recipients against inflation. Social Security provides annual-cost-of-living increases based on the consumer price index. The 2006 increase for benefit recipients was 4.1%.

An individual may begin to receive reduced Social Security retirement benefits as early as 62 years, the minimum retirement age; however, those who retire at the full retirement age will receive full retirement benefits. Since the 1983 Social Security Amendments were enacted, the full retirement age has gone up for those people born in 1938 or later, and will gradually increase until it reaches 67 years for people born after 1959. The full retirement age for someone born in 1942, for example, is 65 years and 10 months and, for someone born in 1952, it is 66 years. The average male is expected to live for 78 years, according to the Social Security Administration, and receive retirement benefits for 13 years. Women are expected to live for 82 years on average and receive retirement benefits for 17 years.

Each additional year a person continues to work full-time beyond retirement age adds another year of earnings to their Social Security record. The higher one’s life-time earnings are, the higher their benefits may be when they retire. A person’s retirement benefit will also increase by a certain percentage if he or she delays retirement. These “delayed retirement credits” are added automatically from the time one reaches full retirement age until that individual starts taking benefits, or reaches 70 years. For example, if an individual

was born in 1939, their retirement benefits will increase 7% for each year they delay retirement.

The Social Security Administration advises individuals to apply for retirement benefits no more than 4 months before they want their benefits to begin. Individuals may apply online using the Internet, call Social Security’s toll-free telephone number, or go to their local Social Security office and apply in person. Special accommodations are available for individuals who are deaf or hard of hearing. Various documents and personal records are needed in order to make an application for benefits, including the applicant’s social security number, birth certificate and the birth certificates of his or her spouse and children if applicable, and proof of US citizenship or lawful alien status.

In addition to personal records, eligibility for means-tested programs (Medicaid and SSI) require documentation of all sources of income and the amount of one’s, or one’s family’s, assets. Eligibility criteria may vary from state to state, depending on the program, because these means-tested programs are joint federal-state programs administered by state and local agencies, often known by such names as the Department of Human Services or the Department of Family Services. Often, income guidelines are tied to the Federal Poverty Level. To be eligible for SSI disability benefits, for example, a single individual is allowed no more than \$2,000 in assets, not counting one’s home and car. Any income over a minimal, specified amount will reduce the benefit, depending on whether the income is earned or unearned. Earned income is often treated more kindly than unearned income when it comes to calculating benefits in order to give people receiving public benefits the incentive to return to work. Allowances for various trial work periods are also meant to encourage people with disabilities to venture back into the workforce as soon as they can.

Perhaps two of the most unsettling aspects of the Social Security benefits system are that disability coverage does not last forever, and that not every person with disabilities is entitled to government benefits. First, women and others who work in the home should be aware that SSDI coverage does not typically last more than 5 years after a period of steady work, called the date last insured, or DLI. If an individual, who has been out of the workforce for more than 5 years or seriously injures herself in a household or car accident is not likely to be eligible for Social Security disability

benefits, no matter how much she contributed to the Social Security system before leaving the workforce.

Second, not every disabled person is entitled to government benefits. A claimant may be entitled to disability benefits under one, both, or neither of two different programs: SSDI and SSI. Some people with very significant disabilities, particularly those who have not worked much outside the home over the years, will not be entitled to any government benefit because they have neither earned the right to draw Social Security benefits on their own work record, nor are they impoverished enough to be eligible for SSI.

Certain other Social Security benefits are available to those who have not worked outside the home through a spouse or parent who has enough work credits. For example, "surviving spouse" benefits are available to widows over 60 years old, or 50 years old and disabled. In certain limited circumstances, a remarried woman can keep receiving widow's benefits on her deceased husband's earnings record. Older women receiving benefits should always explore the financial implications of remarriage. Disabled Adult Child (DAC) benefits are available to developmentally disabled adult children whose parents retire, become disabled, or die. However, someone receiving DAC benefits may not marry and maintain benefits, unless he or she marries another person receiving DAC benefits. Children's SSI is available to help support severely disabled children, but only if their parents have very little in the way of income and assets. Social Security provides no automatic family benefit to full-time wage earners with some savings who happen to have a disabled minor child or spouse.

Nationally, about 50% of claimants who apply for Social Security disability benefits are eventually granted benefits. In some regions, it can take over a year, sometimes two, to obtain benefits under this system. If one chooses to hire a lawyer to assist in the benefits application process, claimants should know that legal fees are highly regulated to protect these vulnerable and often desperate individuals from unscrupulous lawyers. If a case goes all the way to federal court, sometimes the US government will be required to pay the legal bill under the Equal Access to Justice Act (EAJA), a law intended to help individual citizens "fight city hall."

Also, potential SSDI claims should not be ignored, even if one is receiving private long-term disability (LTD) benefits and no immediate dollar benefit is read-

ily apparent, because future Medicare and Social Security retirement benefits may be affected by whether and for how long one has received SSDI benefits.

Related Topics

- Disability, ➤ Early retirement, ➤ Medicaid,
- Medicare, ➤ Pension, ➤ Retirement, ➤ Veterans,
- Widowhood

Suggested Readings

- AARP (American Association of Retired Persons) *The Social Security Book: What Every Woman Absolutely Needs to Know*
United States House of Representatives, House Ways and Means Committee. *The 2000 Green Book: Background Material and Data on Programs within the Jurisdiction of the Committee on Ways and Means*, 17th ed
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Social Security Administration, *Social Security Online, Frequently Asked Questions: Disability*, 2005 Washington, D.C. (October 14, 2005); <http://www.ssa.gov/disability>

Social Stress

Katherine Crow · Natalie Colabianchi

Social stress plays a major role in a person's well-being. Although many researchers do not differentiate between the terms social stress and stress, social stress is different from physical stress in that physical stress is due to stressors (e.g. sources of stress) that directly tax the physical condition of the body such as excessive physical labor or physical restraint. Some sources of social stress are social isolation, unhappy or difficult marriage or

partnership, anxiety resulting from a significant change in one's life (e.g., death of spouse, retirement, change in living status), socioeconomic disadvantage, as well as age, race, or sex discrimination.

Social stress has been found to be deleterious to health. In a study of mice, socially stressed mice were more likely to die after exposure to infection relative to physically stressed mice. In this study, socially stressed mice were defined as those that were put in a cage for a portion of the day with an aggressive mouse, whereas physical stress was defined as being physically restrained in a cylindrical tube for 16 hours a day with no food or water.

Human studies are complicated by the fact that responses to stressors are dependent on the individual experiencing the stressor. The coping mechanisms that follow a stressful event have been described in the transactional model of stress and coping. In this model, the impact of a stressor is mediated by the person's appraisal of the stressor, which is comprised of two assessments. The primary, or immediate, assessment allows an individual to decide whether the stressor is good or bad and important or irrelevant. The secondary assessment ascertains whether the individual believes that they can alter or manage the situation or deal with the emotions that come along with the stressor or do both.

These assessments are influenced by different coping mechanisms. Generally, two different coping mechanisms are described. The first is problem management coping (problem-focused) in which efforts are focused on changing the stressor or the stressful situation. This may include problem solving or information seeking. The second coping strategy is emotional regulation coping (emotion-focused) in which efforts are focused on changing one's feelings about the stressor or stressful situation. This may include denial, venting of feelings, avoidance, and seeking social support.

Other lines of research have investigated the degree to which a person engages (i.e., information seeking, social support) or disengages (i.e., denial) from the stressor. When the source of stress is very threatening or not perceived to be under one's control, disengaging coping strategies are often used. On the contrary, when the stressor is perceived to be controllable, engaging coping strategies may be more likely. In general, research shows there are psychological benefits to using active coping styles over disengaging coping styles, at least in the long term. Furthermore, avoidant coping styles have

been associated with negative health behaviors. These coping mechanisms may be moderated by psychological traits including optimism, locus of control, information-seeking styles along with social support and stress management interventions. Although coping efforts may vary over different stressors, coping styles or psychological traits are inherent characteristics of the individual and remain constant over situations.

The realization that one is growing old can be traumatic. Ideas and attitudes toward aging are very important in how older adults cope with and enjoy the passing years. Studies have shown that older adults who stay busy with a lot of social interaction and can identify their purpose in life are healthier. If this does not happen, or is compounded by other events such as physical illness, the risk of depression increases. Treating depression in this population is important because suicide rates increase with age and are very high among those 65 years and older.

Growing older brings with it many changes, including changes in health, lifestyle, roles, and support. These can include death of spouse or partner, moving to a smaller residence, retirement, or physical illness. Older adults may experience fewer opportunities to develop new friendships. Physical pain and mobility issues can prevent older adults from getting out and enjoying activities and other people. Older adults who are the primary caregivers for their ill or immobile spouses or partners may experience isolation and depression.

Becoming more involved and finding ways to contribute to the broader community can improve overall well-being. There are many ways to be involved, including providing family assistance such as babysitting, participating in group activities, volunteering, or taking a part-time job. Social involvement also helps to fight depression, which is more common among those who withdraw from their friends, family, and community. Social isolation is a strong risk factor for health problems and early death. Social networks provide emotional support and physical support in times of crisis. For example, family and friends can support older adults through the death of a spouse or partner or close friend. They can also provide help if an older adult experiences functional losses. Some benefits of social networks include less risk of early death, better physical and mental health, less risk of disability or decline in activities of daily living, better chance of recovering one's ability to perform activities of daily living, buffered impact of major life events, and greater

feeling of personal control. Having a large social network can have both positive and negative effects. A large social network offers the opportunity for greater involvement and contribution. However, a large social network also means a greater number of losses (death or disability) within the network.

Due to the negative effects of stress, various recommendations have been made for reducing general stress and social isolation. These recommendations include physical activity, eating a healthy diet, practicing relaxation or stress-reduction techniques such as meditation, and use of antidepressant or antianxiety medication if necessary. Furthermore, taking advantage of opportunities in which to develop and maintain social networks such as participation in group activities at senior centers, churches, and other groups can help combat social isolation. Those older adults experiencing grief and loss over the death of a spouse or close friend, those dealing with new challenges as a result of ill health, or those who are shy, may need particular assistance to help deal with these specific issues to be able to take part in social activities and avoid isolation.

Stress can have a major effect on one's health. It is important to recognize stress as a normal part of life, but also realize that chronic stress can have ill effects on the body. Understanding the stress process, coping styles, and ways to combat stress are the first steps for better well-being.

Related Topics

- Bereavement, ► Coping, ► Depression, ► Grief and grieving, ► Social support, ► Stress, ► Widowhood

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Social Support

Bettina A. Rausa

Social support is defined as a fundamental form of human interaction central to the human experience. At various times in peoples' lives, individuals either seek or provide support. Social support includes interpersonal communication and interaction, love and understanding, caring and concern, affection and companionship, financial assistance, and respect and acceptance. Social support has an impact on mental and physical health throughout the life span and may be especially important later in life. Negative stereotypes of older adults and the elderly paint a picture of isolation and unwanted social interaction. In contrast, many studies over the last 30 years have shown that not only do the elderly want and seek social support and interaction, but also social support is complex and changes over the span of a person's life.

The types of relationships that make up social support networks include marriage, parenthood and other intimate ties, friendships, relationships with colleagues at work, memberships in religious congregations, and in social, cultural, political, and recreational associations, and acquaintances with neighbors, shopkeepers, and

service providers. Social support through these networks helps the individual mobilize his or her resources, whether physical or psychological. Support systems help the individual by sharing tasks, providing extra money, food, and other materials and cognitive guidance to improve handling a series of life situations. These relationships give individuals a feeling of belonging, of being accepted, loved, needed, and appreciated.

Functions of social support include instrumental help, emotional support, and affirmation of values and attitudes. Instrumental support includes aid that is tangible. For older people this may be as simple as providing a ride to the grocery store or mowing the lawn and often takes the form of help with daily living tasks. Emotional support is the quality of a person's relationships with others including love, trust, caring, companionship, and empathy. Affirmation is the knowledge and understanding that one's beliefs and attitudes are similar to others, therefore providing membership and acceptance in a group. Social support functions are often intertwined. Those who provide tangible support may also be providing reassurance and emotional support. Furthermore, different network members provide different types of support. People tend to turn to their families for instrumental support, friends for emotional support, and during times of illness, health care workers for advice and aid.

There are two basic types of social support: informal and formal. Informal support networks consist of family, friends, and neighbors. This group provides instrumental and emotional support, companionship, acceptance, love, understanding, and respect. The inner circle of the informal network is usually composed of immediate family and perhaps very close friends. Members just outside of the inner circle typically include people who are progressively less close, such as other family members, friends, neighbors, and coworkers, with those on the outer circle consisting of acquaintances. Those in the innermost circle are the most stable members of the group; there may be a fair amount of turnover in the members in the less central circles. The innermost circle members provide safety and comfort for the person that helps in meeting the challenges of life. As the person ages, these people continue to provide them with support.

Informal support members are generally the primary caregivers to the older adult who needs assistance. Often, family and friends provide emotional support and companionship and help with daily necessities such as shopping, cooking, gardening, laundry, personal

care, information and advice, and in making major decisions, especially those related to health care. Daughters, for example, typically provide care of a more intimate nature to their older parents such as assistance with bathing or eating. Sons are generally not as involved in personal care as daughters are with the exception of the father, if he needs it. Instead, sons tend to perform other instrumental tasks such as financial management, home repair, and transportation. Siblings, grandchildren, nephews, and nieces also provide support to their older relatives. Siblings appear to take on increasing importance in later years and this is particularly true of sisters after widowhood. Among people who have no children, siblings can provide emotional support and instrumental help. Couples who do not have children may intentionally develop strong relationships with relatives such as nephews and nieces because these relatives serve as informal support to them when children would otherwise assume support.

Approximately 20% of the women aged 65 and over in the United States are childless. Although the childless elderly have fewer social ties and are at higher risk of social isolation than elderly parents, research indicates that they are not necessarily less satisfied with life. However, those who are childless by circumstance (i.e., infertility) have lower subjective well-being than do parents. Studies do, however, show that the elderly with no children have less life stress than elderly parents. It has also been shown that insufficient support from children may increase the risk of depression among elderly parents. Thus, having children does not guarantee happiness and support in later life, nor are the childless elderly doomed to social isolation and loneliness. Many childless elderly people have, over their lifetime, secured a stable support network, though their networks are often smaller than those of parents.

The perception of social support plays a significant role for the elderly. Researchers suggest that there is a direct relationship between perceived social support, social involvement, and social contact and the childless elderly's mental health. Studies report that among the childless elderly, women have more psychological distress than men. Marital status has also been shown to be important. Married and cohabitating individuals, those who were never married, and the widowed all showed less stress than the separated or divorced group. Social support therefore may play a greater role in predicting mental health than does parental status.

When confronting loneliness or needing assistance with social issues, older adults prefer friendships to

family, specifically spouses and children. In fact, social support from family members, specifically children, is more strongly associated with physical health, while support from friends is associated with psychological health. The reasons that older adults prefer friendships to family in cases of emotional support are primarily due to sense of continuity with the past that friends can provide. Children may make less adequate companions because, unlike peers, they do not share the same history and life perspective. Additionally, friendships tend to be a matter of choice rather than birth. People choose friends because of shared interests and desire for contact. The relationship itself often helps well-being: to be a friend means that one is desirable as a friend. Finally, friendships share a form of reciprocity that may be absent in family relationships and reciprocity has a strong effect on the satisfaction level of seniors and their friendships.

Formal social support comes from outside of an individual's intimate circles of friends, family, and neighbors. Formal support is in many cases essential to an older adult's well-being because it provides practical support that becomes increasingly dependent as a person ages. Formal support comes from those individuals and institutions one depends upon for services and assistance such as health care providers, social workers, case managers, shopkeepers, delivery persons, and others in institutional settings. As a person ages and outlives many of his or her informal support ties, formal support sources become an increasingly important part of a person's informal support network.

Research indicates that social support is a protective factor. Social support is related to lower levels of mortality among the general population, and it is related to better recovery from illness. For example, a study of patients with coronary artery disease who had low levels of social support (unmarried or without a confidant) had a significantly lower survival rate (50%) compared to those having a high level of social support (82%). The effect of social support in the patients of this study was found to be independent of medical risk and economic resources. In fact, some believe that social support may act to avert the onset of disease, to reduce the severity of disease, or to enhance recovery from illness.

Social support, especially in the form of a confidant, is related to increased self-esteem. Studies suggest that having a confidant accounts for reduced depression in the elderly. A number of studies show that reduced levels of depression due to social support

occurs because the perception that support is available decreases the perceived severity of stresses, thus decreasing anxiety and increasing a person's ability to cope with stressful situations. The reasonable hope or strong certainty that social support will be available has a more beneficial effect on the mental and physical health of the elderly, especially those under economic stress, than actually receiving help. In fact, a national study of economically stressed older adults shows that those who believed that no one would come to their aid in the future had the greatest number of depressive symptoms. Interestingly enough, this same study showed that in contrast to anticipated support, actually receiving assistance was not beneficial to mental health.

Some studies have suggested that social support prevents the onset of health problems by providing reinforcement for healthy behavior, increases compliance with medical treatment plans, and improves self-esteem. The relationship between social support and health however, is complicated by demographic variables such as sex, marital status, socioeconomic status, and age. Elderly men in general appear to be at greater risk than elderly women for increased psychological and physical health problems due to weaker social support systems. The presence of a spouse or partner typically has a protective health influence for the elderly; however, if the relationship is not supportive and positive, the opposite is true. In fact, intimate relationships that are not supportive, trusting, and loving have negative influences on the physical and mental health and overall well-being of the elderly. Socioeconomic status and education levels seem to be factors that place older adults at risk as well. Additionally, the very old tend to have smaller circles of social support as many people have outlived spouses, other family members, friends, and sometimes even children.

Social support can have negative effects. As previously mentioned, a spouse or partner relationship that is not supportive and positive can be detrimental, especially on the health status of the person. Poor social interactions can cause distress and disappointment, placing stress on the individual and affecting well-being. Negative interchanges can be more damaging to emotional health than positive ones that are beneficial. The extent that social ties are beneficial to health depends on their quality. Older persons may use dependency to manipulate and therefore control their support system. Dependency can be used as leverage

for visits from family members and people can feign helplessness to control others.

Social support is important for both mental and physical health throughout the life span, but it may be especially important in later life. A common negative stereotype has been that older adults and the elderly are socially isolated, but the past three decades of research have painted a much more complete picture of how social support changes in both structure and function with age.

Related Topics

- Activities of daily living, ► Caregiving and caregiver burden, ► Depression, ► Family relationships, ► Friendship, ► Siblings

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Socioeconomic Status

Bettina A. Rausa

Socioeconomic status can be defined as an indicator of a person's economic and social position. It represents general social standing in the relative distribution of opportunities and quality of life. Researchers agree that socioeconomic status is best demonstrated by occupation or employment and what is typically used to measure social standing, including education and income. Additional measures include employment status (full-time, part-time, retired, homemaker), work characteristic (type of work), and possessions (e.g. home ownership). Employment status differentiates categories of labor, distinguishes among being employed, full-time, part-time, laid off or unemployed, in school full-time, retired, or keeping house. Work characteristic corresponds to various aspects of productive activity and it includes occupational prestige, rank and social class, and the conditions and qualities of activities for employed persons. Education includes the number of years of schooling and degrees earned. It indicates the knowledge, skills, values and behaviors learned at school, as well as the credentials that lead to job opportunities. Income or economic status includes aspects of economic well-being such as personal earnings, household income, and material or economic hardship.

When socioeconomic indicators are included in predictions of health and mortality, some studies indicate that education has the largest effect followed by income. Part of the reason why education is associated with good health is that education is considered key to higher socioeconomic status because it shapes employment opportunities and income. Some of the reasons why the well-educated experience better health than the poorly educated is that they are more likely to be employed full-time rather than part-time or not at all; they have jobs that provide autonomy and opportunities to be creative, fulfilled, and perform nonroutine

tasks, as well as earn higher incomes. Full-time employment status also gives individuals the opportunity to be able to obtain health insurance through their employers. Higher incomes mean that they face fewer economic hardships, that is, less difficulty paying daily living expenses such as bills, food, clothing, and other essentials. Additionally, higher education levels are associated with better (preventative) health care seeking behaviors. Socioeconomic status affects the elderly most prominently in the status of their health. In fact, most studies of the elderly and socioeconomic status focus on issues of physical and psychological health. The problem facing investigators of socioeconomic inequalities is how best to measure socioeconomic status, particularly in older populations. The problem with using some of the common indicators is that they may not be relevant to older adults. For example, many older adults are no longer employed due to retirement or inability to work due to disability. If a person is retired, the diverse financial sources (e.g., social security, pension or an individual retirement account, stock dividends, and the like) may not necessarily be considered in the economic picture of this group of individuals, leading to potentially biased results of studies of the elderly and socioeconomic status.

Although the issue of socioeconomic inequalities in morbidity and mortality has attracted a large number of studies, very few have focused on the older adult and elderly populations. There is plentiful evidence indicating differences in rates of physical and psychological illness across socioeconomic groups. Lower social class is positively correlated with the incidence of mental illness and limited education levels is positively correlated to increased physical illness. The US Census Bureau has documented that a significantly higher percentage of people in lower-income brackets have physical activity limitations and that lower income is also associated with higher incidences of chronic diseases. Individuals with lower socioeconomic status experience poor health and live shorter lives than those with higher socioeconomic status. Data show that the lower one's socioeconomic status, the higher is the rate of mortality, as one ages. In other words, the lower one's socioeconomic status, the greater likelihood that one will die sooner rather than later.

Another important effect that socioeconomic status has on the elderly is in terms of social support. Decreases in socioeconomic status, education, and

income are each correlated with smaller social networks. The reverse is true for higher socioeconomic levels, education, and income. People of all age groups with higher educational levels report more diverse and broad support networks and those with higher income levels who report a larger number of non-kin network members. A national study of the elderly shows that those with reduced incomes and educational levels report more feelings of loneliness than elderly with financial resources and higher educational attainment.

As the United States prepares for an exponential growth in the number of older adults with the advancement in age of the baby boom generation (20% of the total US population by 2030), and as the country seeks to redesign Medicare, Medicaid, and Social Security policies, we still do not have a clear grasp on how socioeconomic status and health interact, and affect the lives of the elderly.

Related Topics

➤ [Morbidity](#), ➤ [Mortality](#), ➤ [Social Support](#), ➤ [Stress](#)

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Speech Disorders

Jane E. Prasse

The act of speaking is a process involving sight, sound, processing, motor planning, muscle strength, and cognitive function. It is quite complex, and thus the chance for difficulty in speech production is quite

high especially in individuals who have suffered a traumatic event, such as stroke or brain injury.

By definition, speech is the act of moving the muscles of the face and the articulators (the tongue, lips, teeth, soft palate, and glottis) in conjunction with the movement of air from the lungs over the vocal folds and out of the oral cavity to produce a sound. Language is the expression of ideas through a system developed over time. Thus, speech could be explained by the articulation of an utterance, whereas language is the sharing of a thought or idea. The execution of the articulators to achieve their target sound productions can at times be affected due to muscular weakness or damage to the nerves.

Types of Speech Disorders

Dysarthria Dysarthria is the term used to identify individuals with slowed or inaccurate speech due to such changes in muscles or nerves controlling speech output. Common in the elderly, it can be due to stroke, brain surgery, multiple sclerosis, head trauma, Parkinsonism, and nerve palsies.

Depending on the area of the damage, dysarthria can take on many different characteristics. One type of dysarthria, termed “flaccid dysarthria” involves the lower motor neurons (nerve cells leading from the spinal cord to a muscle), and often results in a weak, breathy voice, distorted consonants due to poor lip and tongue strength as well as overall weakness in sound production. “Ataxic dysarthria” on the other hand, is often caused by damage to the cerebellum (the part of the brain that controls movement and balance), in which the individual presents with poor breath support when speaking, difficulty with rhythm and slowed but imprecise and often poorly controlled speech movements.

Verbal Apraxia In adults with verbal apraxia, strength and range of motion of the speech muscles is usually adequate, however the sequencing of the speech movements is impaired. This type of speech disorder is often the result of neurological damage to the brain. The lack of control that individuals with verbal apraxia demonstrate over their speaking ability often lends itself to frustration as the individual may have every intention to speak a certain word, but upon its production, a distorted or wholly different word may be produced. Verbal apraxia is known to occur in conjunction with

language disorders caused by stroke, or brain surgery or injury.

Types of Language Disorders

Although speech disorders can be defined as a disruption in the production of meaningful sounds to communicate, language disorders impact the ability to share thoughts, ideas, and feelings either by verbal, written, or gesturing means.

Aphasia Aphasia, or difficulty comprehending or expressing language or both, often results following injury, such as stroke, to the language centers of the brain. It is generally divided into three types: expressive aphasia, receptive aphasia, and global aphasia.

The individual with expressive aphasia is often able to understand conversations and communication. However, he or she demonstrates varying levels of difficulty (from mild to moderate to severe) in sharing or expressing his or her own thoughts, words, and ideas. Expressive aphasia is also referred to as “non-fluent aphasia,” based on the extreme difficulty individuals with this condition display in attempting to produce speech or to write.

A person with receptive aphasia, also termed “fluent aphasia,” demonstrates little or no difficulty with the production of speech. However, the understanding and accuracy of their thoughts or words are impaired at either mild, moderate, or severe levels. Often, individuals with receptive aphasia are able to speak quite fluently but the content of what they are saying is difficult to understand due to usage of the wrong words or rote or automatic phrases. Depending on the level of severity, the individual with receptive aphasia may or may not recognize their deficits.

Global aphasia is usually the result of large damage to the speech and language centers. Individuals with global aphasia have little expressive or receptive abilities, either verbal or written.

Anomia The inability to access an appropriate word or name during speech or writing is often termed “anomia.” Although a person suffering from fatigue or exhaustion may demonstrate difficulty “finding the right word” at times (thus demonstrating a mild case of anomia), individuals with the chronic inability to recall names of items, places, or people have more

pronounced anomia. Usually, individuals with anomia demonstrate confusion when speaking or writing words similar in meaning. Often, ongoing inability to name objects, places, or people is one of the first indications that a more serious cognitive or language condition may exist.

Speech, Language, and Aging

As a normal, healthy adult ages, the rate of speech often slows and articulation of sounds becomes less precise. More often, voice changes are noted to impact overall understandability or intelligibility of the older adult's speech. For example, due to muscle weakness and decreased neurological function due to aging, the pitch of the geriatric voice may become lower and be perceived as less strong due to diminished breath support and control, and a tremor or vibratory quality be perceived due to structural changes in the vocal folds (vocal chords) associated with aging.

From a language perspective, the healthy older adult will often demonstrate more difficulty than their younger counterpart in recalling short-term events, names, and places. In addition, due to a variety of factors, such as decreased socialization and fewer interactions with others, older people tend to communicate less frequently and use fewer words than those younger people.

Diagnosis and Treatment of Speech and Language Disorders

Following referral from a primary care physician, neurologist or internist, a speech-language pathologist (SLP) often carries out assessment of speech and language disorders. Evaluation of speech function consists of assessing motor control, strength, and coordination of the speech muscles. In addition, breath support and the timing of speech sound productions are evaluated.

Language assessment is most often composed of tasks designed to determine written and spoken ability as well as reading, understanding, and listening functions. A variety of specialized tests are available to the speech and language pathologist for effective assessment of an individual suspected to have a speech or language disability. From there, the appropriate treatment plans may be designed.

Treatment of speech and language disorders often involves involvement of the individual and family members or friends to aid in rehabilitation or the use of compensatory strategies to help with communicative endeavors. For those with dysarthria and apraxia, oral, motor, strength, and coordination exercises may benefit in regaining some or all use of these muscles. Depending on the extent of the deficit, individuals with language disorders may benefit from cognitive and linguistic therapy exercises, the use of a picture or memory book, or augmentative communication devices designed to supplement impaired language function.

The speech-language pathologist often plays an integral role for the individual with a speech or language disorder. A comprehensive assessment of problem areas generally includes testing and observation to better aide in development of a treatment plan based on individual need. With a physician's order for speech therapy, most insurance companies, as well as Medicare and Medicaid, reimburse for speech therapy services when a speech or language need is present. Often, caregivers and family members are involved in the initial planning and treatment to assist in communicating and understanding the patient. The treatment approach used by the speech-language pathologist is based on the individual, and may consist of weekly, biweekly, or daily treatment sessions, lasting anywhere from a few weeks up to a year or more. In the case of severe expressive language difficulties, the speech-language pathologist may incorporate the assistance of a communication device or speech-generating device and train the individual and their family in its use.

Related Topics

- Communication disorders, ➤ Multiple sclerosis,
➤ Parkinson's disease, ➤ Stroke

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It is hard to assess the amount of spirituality that one experiences, as the very nature of collecting this data relies on self report. Even “The spirituality index of well-being: A recently developed instrument for health-related quality-of-life-research,” is theoretically founded on a qualitative approach and relies on information subjectively reported by study participants.

The concept of religion involves organization and structure and is associated with some form of ritual and practice centered around a belief in a higher power or God. Definitions of religion throughout the literature include organizational religious activity, no organizational activity, subjective or intrinsic religiosity, attending a faith-based gathering on a regular or infrequent basis, participating in faith-based prayer or study groups, engaging in prayer or meditation practices, reading faith based literature, and listening to faith based radio or television.

Spirituality can be related to religion for some persons, but not for all. For example, an atheist might embrace spirituality yet not engage in religious practices or center beliefs around the concept of God. Because the amount of religious practice a person engages in can sometimes be quantitatively measured, such as frequency of attending faith based institutions and involvement with related activities, research often relies on these factors to measure relationships between religious practices and quality of life.

Spirituality

JannatFay Clark

The term spirituality comes from a Latin term meaning “of breath.” It can be defined as relating to, consisting of, or having the nature of spirit. It is not tangible or material; it relates to the soul. Addressing issues of spirituality is increasingly seen as an important part of astute health care, and nearly 30 US medical schools now offer courses on the subject of spirituality and health. In addition, research is being conducted in this area by many professional disciplines such as nursing, anthropology, psychology, sociology, social work, and in the physical sciences.

Spirituality and Health

Spirituality versus Religion

Spirituality and religion (and its related practices) are often used interchangeably in the literature, and though they can be related, the two concepts are different. Definitions for the term spirituality vary throughout the literature and encompass personal searches for meaning, religious beliefs and values, belief systems, spiritual and religious practices, mystical experiences, emotional fulfillment, self actualization, development of wisdom, an appreciation for life itself, engagement in the creative process, and the concept of a higher power or God. For many reasons, the concept of spirituality, as defined in quantitative studies, is subjective.

The literature reflects a weak relationship between spirituality and health. One study relating spirituality to cardiovascular disease showed older spiritual adults to have a 40% lower chance of having high blood pressure. A second study was completed using older persons under the age of 75 as subjects. These persons were medically ill and practiced spirituality by engaging in religious activities. These activities were positively correlated with overall better daily functioning and improved health status. However, another study showed an increase in development of cancer amongst older adults who engaged in regular religious practices. A third and 12-year-old prospective study of nearly 3,000 older adults found evidence that attending religious functions may delay the development of problems with daily function due to health reasons. The study showed that health problems related to aging

make it difficult to attend religious functions. However, the effect is usually short term and does not detract from the long-term positive effect of religious activity on health.

It is possible that organized religious activity enhances physical health by helping chronically ill older adults remain active and involved in the community. This provision of meaningful activities and social support may enhance ability to cope with daily challenges and with maintaining positive attitudes toward self care and motivation to recover from illness. Few other religious characteristics predict better physical health than organized religious activities.

Contrary to these findings, engaging in the act of watching religiously oriented television has been correlated with an increase in problems with physical illness. These persons also tended to report worse overall physical functioning including high blood pressure and an increase in depressive symptoms. This was true especially amongst those ranging from ages 50–64. This negative affect could be because of the lower level of physical activity required to watch television as well as its exclusion of personal interaction.

A complication that arises in completing research on relationships between health and practices of organized religious activity is that some religious organizations, such as Mormonism, highly discourage consumption of alcohol and use of nicotine, which have both been associated with promoting health problems, whereas other religions may promote less restrictive rules regarding use of these substances. Research results can easily have built in biases based on which religious organizations and their sample populations have been drawn from.

When coping with illness, spirituality can become an important mechanism for achieving a sense of hope. Interestingly, research studies have shown that hope enhances adaptive capacities of people with chronic illness, including among elders. In a study on Parkinson Disease, for instance, it was demonstrated that feelings of hopefulness helped motivate people towards successfully facing the demands of daily living. Specifically, it helped them to develop renewed interest in daily activities, to extend themselves to others through socialization, and to promote a more positive outlook toward their lives in general.

Depressive symptoms often increase through progression of the aging process. A cultural factor con-

tributing to this may include a current underlying value in US society, where ability to produce in an economic sense is largely how we determine a person's self-worth. As the aging process proceeds, persons in late-life stages are generally less likely to remain in the work force. Our tendency to devalue aged persons in conjunction with their increased likelihood of incurring losses such as death of loved ones and life partners, can cause an increase in depressive symptomology. Overall, the literature suggests that religious activities, religious practices outside of organized religious institutions, and spiritual experiences in general, are not only common in older persons, but are often used by them to assist in coping with depression.

Measurably better psychosocial functioning has been associated with older persons who practice spirituality. Reported levels of well-being associated with late adulthood and spirituality can be derived from engaging in positive relationships with others and involvement in tasks that serve the individual and the community in a positive manner. These community tasks can consist of providing volunteer child-care services, participating in telephone outreach services for home bound individuals, and volunteering at local food pantries or other food outreaches. It is challenging to track exact causes for this relationship. Research over three decades has shown that greater levels of religious involvement predicts future nonreligious group memberships, contacts with close friends, and marital stability. With regard to health issues, these increased levels of social supports may enhance the healing process by increased assistance with medical needs (i.e., help with bathing or receiving injections), meal preparation, getting to medical appointments, engaging in conversations to promote encouragement toward wellness, and developing a sense of hope for the future.

Storytelling can enhance the development of spirituality for persons in later-life stages by providing a rich creative outlet for them to honor their life experiences. As people approach their seventies, they tend to experience a more urgent desire to discover greater meaning in their lives through a process of looking back, summing up, and giving back. Creative expression in this phase of life includes sharing personal autobiographies, storytelling, engaging in activities that create opportunities to give back to others and

to the community. Reaching creative potential in these ways follows the natural course of development in the inner spiritual development involved with the second half of life.

Family and community members as well as professionals can encourage this creative sharing by being good listeners and extending friendship to older persons as they engage in the story telling process.

Related Topics

- Complementary and alternative health practices,
- Identity, ➤ Religion, ➤ Wisdom

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- American Society on Aging: Forum on religion, spirituality and aging, 2006, San Francisco, CA (28 February 2006); <http://www.asaging.org/networks/FORSA/a&s-122.cfm>
- Center for Spirituality, Theology and Health, Duke University, 2004, Durham, NC (29 February 2006); <http://www.dukespiritualityandhealth.org/index.html>

Stem Cell Research

Cynthia M. A. Geppert

Stem cells are among the most promising and controversial developments in the history of science. Stem cell

research offers enormous potential to improve the quality of life of older people and even to extend the life span. The technical, political, and ethical obstacles to the realization of this potential are also immense.

Stem Cells

Two main types of cells are the focus of current scientific hope and ethical concern: embryonic stem cells (ES) and adult stem cells (AS). ES cells are taken from embryos obtained through in-vitro fertilization and were first grown in a laboratory in 1998. AS cells are found in small numbers in many organs and tissues, such as bone marrow, brain, and liver where they mobilize to repair and regenerate damaged and diseased tissues. Scientists are working to find ways to grow adult stem cells in the lab. Both ES and AS cells have two amazing properties. First, because they are not yet specialized for a particular function in the body, they can undergo many divisions and renew their own lines. Second, certain scientific manipulations can induce the cells to develop into specialized cells, i.e., a heart or liver cell, and perform its function. Thus, stem cells can form tissues from many parts of the body; in Latin they are “pluripotent.”

Stem cell research may be particularly beneficial for elders. These cells could be used to treat injured organs or diseases like Parkinson’s disease, diabetes, and heart disease, all of which are more common and debilitating in the older population. Parkinson’s is a degenerative

■ Table 1

Differences between embryonic and adult stem cells

Embryonic stem cells	Adult stem cells
Pluripotent—can become any type of cell	Limited to differentiating into cell types from their tissue of origin, but some experiments suggest more plasticity
Large numbers can easily be grown in laboratory	Few in body and difficult to grow in laboratory (large numbers needed for therapies)
As from another person, could trigger rejection requiring immuno-suppression, not yet shown that rejection will occur	Use of person’s own cells means they would not be rejected

neurological disease that afflicts over 2% of individuals over age 65 and results in progressive loss of dopamine producing neurons that control movement. The result is tremor, rigidity, and decreased ability to move and function. Stem cell treatment for Parkinson's would involve inducing ES to differentiate into these neurons and then transplanting them into human brains where it is hypothesized they would begin to produce dopamine, alleviating immobility and other symptoms.

However, many technical problems remain to be resolved before either ES or AS can enter the mainstream of clinical medicine, including distinguishing authentic stem cells, decoding the signals that trigger differentiation, avoiding uncontrolled growth as seen in tumors, targeting the delivery of the cells, and preventing rejection. There are also important differences between the two cell types with salient implications for aging and public health, which are summarized in [Table 1](#).

Stem Cells and Aging

Most cells have a defined period of between 30 and 50 divisions, after which they are no longer renewable. This limited replacement capacity is thought to be one of the main mechanisms of aging—it is our organs and their functioning that keep us alive. Scientists speculate that stem cells, with their limitless capacity for self-renewal, could become a “molecular fountain of youth” that would regenerate tissues indefinitely, thus extending life dramatically. This longer life would also be much freer from disease because the major diseases of old age such as heart disease, cancer, and stroke would be treatable with stem cell therapy. Twelve million older people in our country suffer from chronic conditions, such as arthritis, that cause disability, pain, and loss of function. These conditions would be either cured or improved through the use of stem cells. Even organs damaged beyond repair could be transplanted with stem cells. The public health savings in both dollars and human suffering would be incalculable.

Stem Cells, Aging, and Public Health Ethics

Perhaps even more daunting than the scientific challenges, which must be resolved before stem cell therapy becomes a reality, are the political and ethical dilem-

mas that will be difficult to reconcile. The central conflict in the ethics of stem cell research involves the use of ES cells that require experimentation and use of embryos. Opponents hold the destruction of human life to relieve the suffering of other persons as morally unacceptable. Religious considerations are paramount for many of those who oppose stem cell research with ES cells, as they believe all life is sacred and cannot be used as a means to an end. They instead advocate intensified research into AS cells. Proponents of ES cell research argue that the duty to relieve suffering justifies the use of embryos, particularly when the majority of those created for in-vitro fertilization are discarded rather than implanted. More philosophical and scientific values tend to influence those who see ES cell therapy as permissible. They believe that embryos are not yet persons. Therefore, their donation toward the worthy goal of saving lives of those who are persons offers the best prospects for effective stem cell based therapies.

Political positions derive from these moral stances and are the most contentious aspect of the debate, as political figures influence funding for scientific research into stem cells. President Bush established federal guidelines for stem cell research in 2001. Only stem cells derived from ES created for reproductive purposes may be used. The embryos must be no longer needed for fertility treatments, the donor must consent to use of the embryo, and no financial incentives can be provided to donors. Approximately 64 ES lines existed prior to these guidelines, but scientists argue that only a few lines are accessible and viable because of biological limitations and legal restrictions. States, private research companies, and foreign countries to which the criteria do not apply are making impressive progress in stem cell research. Even Congress is considering less restrictive provisions for US researchers precisely because the public health ramifications for older citizens are so wide-ranging and far reaching.

Related Topics

[Ageism](#), [Alzheimer's Disease](#), [Cardiovascular Disease](#), [Ethics](#), [Parkinson's Disease](#)

Suggested Readings

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 University of Wisconsin Stem Cell Web Site (11 November 2005) <http://www.news.wisc.edu/packages/stemcells/>

Stigma

Josh Reiher · Thomas Heinrich · Laura Roberts

Stigma is a term originally used by the ancient Greeks to refer to a sign or mark on the body that designated the bearer as a morally flawed person. Centuries later, the pleural form “stigmata” would give reference to the marks left on Christ’s body during crucifixion. In the past century, however, the term has shifted away from the physical reference to give greater emphasis to the social and cultural meaning. Erving Goffman, the sociologist who pioneered modern social stigma research, defined the word in contemporary terms as “an attribute that is deeply discrediting.” More recently, Link and Phelan have emphasized how stigma exists “when elements of labeling, stereotyping, separation, status loss, and discrimination occur together in a power situation that allows them.”

Stigma is an inherently relational concept. For stigma to exist, there must be individuals who have a social identity that is distinct, separable, and devalued, and there must be individuals within the social context who see themselves “ideal” or “better” in some manner

that is distinguishable from the people who “belong” to the stigmatized group. An essential aspect of stigma is interpersonal influence or power; stigma does not exist in the absence of an asymmetry of social, economic, and political power across individuals and across groups in societies. It takes power to stigmatize others, and being empowered decreases one’s vulnerability to being stigmatized.

Stigma is understood to be different from shame, although these ideas are related. Shame is defined as a painful emotion caused by consciousness of guilt, shortcoming, or impropriety. It is conceptualized as representing an individual’s internalized subjective response to the assault of stigma. The devaluation of one’s social identity through stigma and shame may severely undermine one’s self-esteem, sense of self, and feeling of competence in the world. Many clinicians and social scientists have observed the phenomenon of “self-loathing” that people in stigmatized groups may experience. These powerful negative effects, taken together, serve to further diminish the positive social roles of stigmatized individuals.

Implications for Elders

The stigma process—the linking of labels to attributes that are perceived as flawed, not ideal, and of lesser value and worth—may be an important issue influencing the lives of elders in our society. Elderly persons may be understood as constituting a vulnerable group that differs from the norm of our society where youthfulness, strength, and independence are valued and admired. Elders may thus experience stigma associated with the perception of being weak, frail, and immobile. Stereotypes related to “failing” physical and mental health and diminished productivity and contribution within communities (even when contrary to the true health, productivity, and contribution of individual elders) may be an adverse pressure and source of age-related discrimination in our society. These concerns are especially keen for elders with multiple potential sources of vulnerability and stigma, such as older persons who suffer from serious physical or mental illnesses, who are immigrants, who are racial minorities, or who derive from distinct cultural or religious backgrounds.

Fisher performed an interesting study on the effects of stigma on elders who relocate to retirement facilities. The study concluded that facility residents felt

pited and patronized by others and that relocation to an institutional setting was oftentimes psychologically damaging to the residents. Link's work suggests that stigmatizing conditions (e.g., alcoholism) are seen by some as being a reflection of moral failure rather than medical illnesses and that diseases that are seen as more "biologically determined" are less stigmatizing overall. Other studies have suggested that individuals respond to negative social labeling by becoming demoralized and fearful of interpersonal rejection, which in turn has its own adverse consequences. A study by Crocker and Major, for instance, indicated that stigma is linked with more negative outcomes in work lives and personal lives, and that the transition to a stigmatized group may be marked by unemployment and income loss. Finally, empirical work suggests that stigmatized individuals may develop maladaptive coping strategies, such as secrecy or concealment of disability; isolativeness; refusal or rejection of beneficial interventions such as medications, canes, wheelchairs, or hearing devices. Key challenges for stigmatized individuals are thus confronting the prejudicial attitudes of the general public and generating constructive adaptations despite the negative pressures associated with stigma.

Although stigma exists in all societies, the stigma associated with aging varies. In Western culture, physical disabilities, neurological deterioration, medical illness, and mental disorders are all stigmatized, and these contribute to the stigma experienced by elders. Hispanic communities, especially those with strong social networks, appear to attach less stigma to elders. Among Asian communities, elders are not stigmatized but affirmed and honored.

Stigma is a potent influence in our society, and it represents a negative factor affecting the lives of millions of elderly Americans. With the growing number and proportion of elders in our society, it may be that perceptions of "the norm" will naturally evolve in the future and older people will experience less stigma than they do presently. Nevertheless, proactive efforts to address and diminish the stigma attached to aging may allow our society to provide a more enlightened, compassionate, and respectful environment for our elders.

Related Topics

➤ [Americans with Disabilities Act](#), ➤ [Discrimination](#)

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Suggested Resources

DHHS Resource Center to Address Discrimination and Stigma; http://www.adcenter.org/topics_materials/g-orgs.htm

Stress

Katherine Crow

Stress is a medical term for a wide range of strong external stimuli, both physiological and psychological. Stress can cause a physiological response called the general adaptation syndrome, first described in 1936 by Hans Selye. Selye separated the physical effects of stress from other physical symptoms by observing that patients suffered physical effects not caused directly by their disease or medical condition. He described the general adaptation syndrome as having three stages: alarm reaction, where the body detects the external stimulus; adaptation, where the body defends against the stressor (e.g., source of stress); and exhaustion, where the body begins to run out of defenses.

There are two types of stress: eustress (positive stress) and distress (negative stress), roughly meaning challenge and overload respectively. Both types of stress may be the result of negative or positive events. Eustress is essential to life, like exercise to a muscle, however distress can cause disease. Furthermore, it is important to keep in mind that what causes distress for one person may cause eustress for another, depending upon each individual's perception of life. Stress can directly and indirectly contribute to general or specific

disorders of the body and mind, and have a major impact on the physical functioning of the body. Such stress raises the level of adrenaline and corticosterone in the body, which in turn increases the heart rate, respiration, and blood pressure and puts more physical stress on bodily organs. Long-term stress can be a contributing factor in obesity, heart disease, cancer, high blood pressure, stroke, and other illnesses.

Symptoms of stress can include physical symptoms (e.g., sleep disturbances; back, shoulder, or neck pain; high blood pressure; and immune system suppression making one more susceptible to colds, flu, and infections), emotional symptoms (e.g., anxiety, depression, irritability, memory problems, and substance abuse), and relational symptoms (e.g., increased arguments, isolation from social activities, road rage, and overreactions).

Except for major catastrophes, few events are stressful in themselves. Stress occurs when one perceives a situation as threatening. Stress may be linked to external factors such as the state of the world, the country, or one's community; unpredictable events; or family-related issues. Stress can also result from one's poor health-habits, negative attitudes and feelings, unrealistic expectations, or perfectionism.

Older adults often face a great number of stresses that can be caused by a broad range of events and situations. Stresses can be physical or social. They can be an ongoing part of day-to-day life or caused by sudden traumatic events. Common stresses for older people include diseases or health conditions, perceived loss of social status after retirement, and death of a spouse or partner.

Chronic diseases and conditions affect most older adults. Family members, especially spouses or partners, are most often caregivers. More than 44 million Americans (mostly women) care for family members of all ages. Many older adults are also caregivers for another family member. Caregivers have twice the risk as others for mental and physical health problems. They are also more than twice as likely to be taking medications to relieve anxiety or stress. Social isolation, family disagreements, and financial hardship are common problems associated with long-term caregiving.

As people age, the death of friends and family becomes more common. Losing and grieving for a spouse or partner is one of the most traumatic situations commonly faced by older adults. More than 1 million people (mostly women) were widowed in the United States in 2003. It is expected that this number

will increase to 1.5 million every year by 2030. Other losses that may also cause grief include loss of sight or hearing and losses in function caused by illnesses (e.g., trouble walking from arthritis.) These and other negative life events place a heavy burden on older adults.

People have many different roles throughout their lives. They are children, parents, friends, workers, patients, students, sports enthusiasts, artists, etc. One of the most dramatic role changes involves retirement. When older adults retire, they leave work and social roles that likely provided economic rewards as well as social status. In addition, older people may find that there are changes in their personal relationships after retirement. For example, spouses or partners may find themselves spending much more time together than they ever did before, which can cause increased stress. Older parents may add the role of grandparent or even great-grandparent, which brings both new rewards and demands. Losses in function may place older adults in the position of asking for help, rather than providing it. Similarly, another's losses may place someone in a caregiving role. These role changes can be stressful and affect both mental and physical health.

Many social factors affect how people think about themselves and how others think about them. Sex, race, and economic status all affect one's real and perceived social status. These factors also can affect the resources that are available to help cope with aging and health. For example, it is difficult for poorer people to use support programs or community activities that cost money. Ethnic or cultural backgrounds may also have a major effect on peoples' outlook and how they deal with situations. For instance, some people may agree to only those treatments that are acceptable in their culture.

Problems caused by stress often relate to how people deal with the stressful situation. There are positive ways to deal with stress, even when the stress is beyond one's control (e.g., the death of a loved one). Learning positive behaviors can improve how one understands and copes with stress. For example, people can learn how to take more control of their response to a stressful situation. They can also become more aware of social services and programs that are available. Family counseling and therapy can also strengthen social relationships with family and friends.

Coping strategies are emotional and mental responses that help one deal with stress through positive reinforcement and reinforced self-esteem. Al-

though there are a number of coping strategies, a strong belief in self and one's ability to deal with difficult situations is particularly successful. This is true for many kinds of stress, including those related to disease, loss in function, and changes in social roles. Feelings of self-confidence and personal control can help improve function and overall quality of life, even in the face of physical disability. For example, thinking confidently and optimistically in the face of bad news might help meet the challenge and increase the likelihood of a good result. Another coping strategy people tend to adopt with age is to reduce the number and kinds of things they do, but to maintain those activities that they like the most and do well. Although performance and abilities may lessen over time, older adults can continue to do the things they enjoy. Participating in family and community activities is a major source of personal satisfaction. Being involved plays an important role in improving self-esteem and giving meaning to life. This is true for people of all ages, but is especially important for older adults. Healthy behaviors have positive effects on overall well-being at any age. Positive behaviors include being physically active, eating a healthy diet, not smoking, drinking alcohol in moderation, and practicing relaxation or stress-reduction techniques. Although these are physical behaviors, they are also important psychologically and socially. For example, older adults with strong feelings of personal control and self-esteem are more likely to practice healthy behaviors. Similarly, healthy behaviors are likely to promote self-esteem and feelings of accomplishment in older adults.

Related Topics

- [Caregiving and caregiver burden](#), ● [Coping](#)
- [Retirement](#), ● [Social stress](#), ● [Social support](#)

Suggested Readings

- Stanley MA, Novy DM (2000) Cognitive-behavior therapy for generalized anxiety in later life: An evaluative overview. *J Anxiety Disord* 14:191–207

Suggested Resources

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Stroke

Julie K. Schulman

Strokes are the third leading cause of death in the United States, following only coronary heart disease and cancer. They are also the most common cause of neurologic impairment other than Alzheimer's disease. Each year, 700,000 people have a new or recurrent stroke. The Centers for Disease Control and Prevention (CDC) estimates that every 45 s, someone in the United States suffers a new or recurrent stroke, and every 3 min, someone in the United States dies from a stroke.

A stroke is a type of brain injury that occurs in one of two ways. The most common type, accounting for 88% of all strokes, is an ischemic stroke. This happens when a vessel that supplies blood to an area of the brain is blocked, causing the death of surrounding brain cells that are normally supplied by the oxygen carried in the blood. The second type of stroke is a hemorrhagic stroke, which occurs when a blood vessel ruptures and bleeds directly into the brain, damaging brain cells in that area. The area of cell death that results in either case is called an infarct.

The most common initial symptoms of stroke are sudden numbness or weakness of the face, arm, or leg, particularly on one side of the body; sudden confusion, or trouble speaking or understanding; sudden trouble with walking, dizziness, or loss of balance or coordination; or a sudden, severe headache with no known cause. The variety of presenting symptoms reflects the many different specialized areas of the brain in which a stroke can occur. A stroke that occurs in the motor cortex of the brain, for example, may produce a physical symptom such as weakness in one leg. On the other hand, a stroke in the language centers of the brain can produce sudden problems with communication such as slurred or incomprehensible speech, or difficulty in understanding speech.

A person can develop symptoms of a stroke that last less than a day. This is called a transient ischemic attack (TIA). TIAs usually last about 90 min and may be caused by a partly blocked blood vessel, a small embolus that briefly blocks a blood vessel and then disintegrates, or intermittent small amounts of blood leakage from an aneurysm. TIAs should always prompt a rapid medical evaluation, because the data shows that approximately one third of people who have TIAs will eventually have a stroke. One study showed that 10% of people treated in the emergency department for a TIA had a stroke within 90 days. The prevalence of TIAs, like strokes, increases with age. In men, the prevalence increases from 2.7% for ages 65–69 to 3.6% for ages 75–79. For women, it is 1.6% and 4.1%, respectively.

Almost three quarters of all strokes occur in adults over 65. The major risk factors for stroke include atherosclerosis, heart disease, hyperlipidemia, high blood pressure, diabetes, smoking, and arrhythmias. Atherosclerosis—the thickening of blood vessel walls with fatty deposits, which makes the vessels more prone to blockage and more vulnerable to rupture—develops slowly over many years, so that the risk of having atherosclerosis increases as people age. Most other medical risk factors, such as hypertension or heart disease, are either more common in the elderly, or more serious, which leads to the higher incidence of strokes.

The distribution of strokes is different in seniors than at younger ages. On average, men are more vulnerable to strokes, with an incidence rate of strokes that is 1.25 times that in women. However, women become increasingly vulnerable to stroke with age and particularly after menopause, so that at older

ages, the gender difference disappears. At age 65–69 the male/female incidence ratio is 1.59, but by age 75–79 it is 1.35, and by age 80 and older, it is 0.74. In fact, because women tend to live longer than men and there are larger numbers of women in the elderly population, each year 40,000 more women than men have a stroke.

Strokes have a particularly dramatic impact on mortality and morbidity in the elderly. In adults over 55, the lifetime risk of stroke is greater than 1 in 6. About 15% of people who have strokes die in the hospital, and this number is higher in the elderly. In those who survive, the consequences of a stroke—which include paresis (weakness) or paralysis on one (hemiparesis) or both sides of the body, blindness, or difficulties understanding or producing speech (aphasia)—can be mild or severe. In one study of people aged 65 and over who had an ischemic stroke 6 months earlier, 50% had some hemiparesis, 30% were unable to walk without assistance, and 19% had aphasia; 26% were living in a nursing home. The older that someone was at the time of the stroke, the more likely they were to have significant deficits afterwards.

It is vital to remember that many strokes are preventable, and should not be seen as an inevitable event as people age. Blood pressure and cholesterol levels can be improved by maintaining a normal weight and eating a healthy diet that is low-fat and limits salt intake. Quitting smoking leads to a significant decrease in the risk of stroke after 2 years, and to a risk that is no higher than that of nonsmokers after 5 years. Physical activity is also very important, and has been proven in a number of large studies to significantly reduce the risk of stroke in all age groups. People at particular risk for strokes can take antiplatelet medications such as aspirin or ticlopidine, or anticoagulant medications such as warfarin, which make blood clots less likely to form and thereby decrease the risk of strokes. Other medications can also be used to treat hyperlipidemia, hypertension, arrhythmias, or diabetes.

Another important point is that education about the symptoms of early strokes so that people get immediate medical treatment, can reduce morbidity and mortality. If a person has a clot blocking a blood vessel, they can be given tissue plasminogen activator (tPA) intravenously to break up the clot. However, it must be given within 3 h of having a stroke, so going to an emergency department as soon as symptoms begin is critical. In some instances, tPA can be applied endoscopically, directly at the site of the clot. If a person is

having a hemorrhagic stroke, medications that control blood pressure can improve the outcome. Excess brain pressure can be treated with medications, or in some cases, a ventriculostomy may be performed to drain excess fluid. If the bleeding is caused by an aneurysm that has ruptured, a coil can be placed endoscopically to seal off the aneurysm.

Related Topics

- Cholesterol, ► Heart disease, ► Rehabilitation,
- Smoking

Suggested Readings

- American Heart Association (2005) Heart disease and stroke statistics—2005 update. American Heart Association, Dallas, TX
Kelly-Hayes M, Beiser A, Kase CS, Scaramucci A, D'Agostino RB, Wolf PA (2003) The influence of gender and age on disability following ischemic stroke: The Framingham study. *J Stroke Cerebrovasc Dis* 12(3):119–126
- United States Department of Health and Human Services (2003) A public health action plan to prevent heart disease and stroke: Executive summary and overview. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Atlanta, GA

Suggested Resources

- American Heart Association. Heart Attack/Stroke Warning Signs and American Stroke Association pages. Dallas, TX (2005); <http://www.americanheart.org>
- Brain Attack Coalition. Bethesda, MD; <http://www.stroke-site.org>
- Centers for Disease Control and Prevention. Cardiovascular Health Program. Atlanta, GA (21 December 2005); <http://www.cdc.gov/cvh>
- National Institute of Neurological Disorders and Stroke. Bethesda, MD (2005); <http://www.ninds.nih.gov>
- National Stroke Association. Englewood, CO; <http://www.stroke.org>

Subdural Hematoma

Jacqueline Spiegel

Subdural hematoma (SDH), sometimes referred to as subdural hemorrhage, is a condition in which a collection of blood forms between the dura (the thick, outermost protective covering of the brain) and the arachnoid (the transparent, middle covering of the brain). Tiny veins called bridging veins run between the dura and the surface of the brain. A subdural hematoma develops when these veins tear and leak blood, usually as the result of a head injury. There are two major forms of SDH: acute and chronic. Acute SDH typically occurs minutes to hours after direct head trauma; however, acute SDH can also occur from acceleration forces alone, as seen with whiplash, especially in the elderly and those taking anticoagulant medications. An acute SDH is considered a medical emergency. Chronic SDH usually develops over time. Chronic SDH may or may not be accompanied by a history of injury. Studies show that 20–30% of patients with chronic SDH recall no head injury. In a chronic SDH, the blood leaks from the same veins just at a slower rate resulting in distinctively different signs, symptoms, imaging characteristics, and prognosis from an acute SDH.

Risks include head injury, age, chronic use of aspirin, anti-inflammatory drugs such as ibuprofen or blood thinning (anticoagulant) medication, chronic heavy alcohol use, and numerous diseases associated with blood clotting problems. The risk for development of SDH is more common in people older than 60 years. The elderly are predisposed to cerebral atrophy (loss of brain cells and brain shrinkage) that stretches and weakens the bridging veins. Thus, these veins are more likely to break, even after a minor head injury.

The main symptoms of SDH are dependent on the type. Up to one third of patients with acute SDH are drowsy or comatose from the moment of injury. The other two thirds may experience symptoms of headache (one side), weakness or paralysis (one side), confusion, waxing and waning consciousness, and personality changes. On physical examination, the patient exhibits decreased consciousness, inability to respond to the external environment, changes in the shape or reaction of the pupils to light, and decreased motor strength or sensory loss in arms or legs. Signs of worsening condition include deteriorating level of consciousness and unresponsive pupil. The Glasgow Coma scale is used to evaluate patients in a coma. The symptoms and exam findings in chronic SDH are quite different. Headache is common, but not indicative of chronic SDH. The headache may fluctuate in severity, sometimes with position

changes. Other symptoms of slowed thinking, inattentiveness, change in personality, seizure, or mild weakness in an arm or leg emerges gradually over weeks or months after the original bleed. Because the presentation is vague, the initial impression is of a stroke, tumor, drug intoxication, depression, or dementia type illness. Occasionally, a chronic hematoma causes brief episodes of speech loss and weakness, which is indistinguishable from a transient ischemic attack (ministroke).

Diagnostic studies are indicated in patients with a history of head injury, symptoms indicating SDH, or high-risk populations (elderly, infants, alcoholics, anticoagulant therapy) with unexplained neurologic symptoms. The diagnostic approach to the evaluation of SDH is computed tomography or CT scan. On CT scan, the appearance of SDH is that of a “crescent moon” with the blood creating pressure on the brain tissue and shifting the contents within the skull. There can be more than one SDH at a time. Magnetic resonance imaging (MRI) can also be used in the evaluation of chronic SDH. MRI is not recommended in the evaluation of acute SDH.

As with the symptoms of SDH, the treatment also depends on type. Acute SDH typically requires immediate evacuation of the blood through burr hole craniotomy (surgical incision into the skull). In chronic SDH, clinical observation and repeat imaging studies are reasonable in patients with few symptoms, small blood collections, or who are poor candidates for surgery. Treatment with oral steroid medications alone may be sufficient, but surgical evacuation is more often successful to prevent recurrent fluid accumulations. In both cases, treating or controlling any underlying causes for the hematoma is necessary.

Acute SDH is associated with high death rate or long-term complications, not only due to the hematoma, but also the extensive brain injury resulting from the trauma. Simple SDH accounts for about half of all cases and implies that no brain injury is present. Complicated SDH implies that there is underlying injury to the brain. The death rate in simple and complicated SDH is 20% and 50% respectively. Acute SDH may go on to develop a subacute hematoma syndrome. This syndrome occurs days or weeks after the injury with symptoms of drowsiness, headache, confusion, or mild weakness on one side. Subacute hematoma syndrome is typically seen in alcoholics and the elderly. The prognosis in chronic SDH is much better than acute SDH, and many will heal

over time without surgery. However, the rate of recurrent chronic SDH is approximately 40%.

Related Topics

➤ Headache, ➤ Stroke

Suggested Readings

- El-Kadi H, Miele VJ, Kaufman HH (2000) Prognosis of chronic subdural hematomas. *Neurosurg Clin N Am* 11(3):553–567
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Substance Use and Chemical Dependence

Ted Parran, Jr.

Euphoria-Producing Substances

Human beings have used euphoria producing substances—or drugs of potential abuse—for hundreds of thousands of years. Their use is due to the fact that all these drugs directly or indirectly produce quick surges of a neurotransmitter or brain chemical called dopamine. Dopamine is a substance which when released in the brain results in many different effects depending upon where in the brain it is released. When released in one part of the brain (the substantia nigra), dopamine relieves the symptoms of Parkinson’s disease. However when released from the middle part of the brain (the ventral tegmental area) to the front part of the brain (the prefrontal cortex) dopamine produces a feeling of pleasure or euphoria, in other words a “high.” Virtually every euphoria-producing substance of use, abuse, and addiction that has been carefully studied has been shown to result in this quick increase in dopamine and associated pleasurable euphoria sensation.

Classes of euphoria producing substances

Although this effect on dopamine is the characteristic

that results in the use of these drugs, they also have many other brain effects. It is these other brain effects that dictate the type or class of the drug. There are four main classes of euphoria-producing substances: stimulants, opioids, sedative hypnotics, and hallucinogens. Stimulants are drugs that result in the release of varying amounts of norepinephrine or adrenalin in addition to dopamine. Some examples of stimulants include cocaine, amphetamine, caffeine, nicotine, and many of the prescription medications for attention deficit disorder, narcolepsy, and weight reduction. The release of adrenaline results in dilated or widening of the pupils, increased attention, sharpened reflexes, increased blood pressure and heart rate, increased alertness, decrease need for sleep and decreased appetite. Therefore, stimulants directly produce euphoria from the release of dopamine, and produce "stimulation" from the release of adrenalin. In addition, the more potent amphetamines and cocaine tend to produce a high degree of judgment impairment as a consequence of over use and intoxication.

Opioids are natural or synthetic compounds related to opium that affects the mu or morphine receptor in the brain. Some examples of opioids include morphine, heroin, methadone, hydrocodone, oxycodone, and codeine. As a consequence of the stimulation of the μ receptors, opioids directly produce constriction of the pupils, dry eyes, dry mouth, constipation, sedation or sleepiness, slowing of the heart rate and breathing rate, decrease in blood pressure, and pronounced pain relief. An indirect effect, or unrelated side effect of opioids, is their stimulation of the release of dopamine, and hence production of euphoria. Interestingly, opioids do not tend to produce pronounced changes in judgment when producing intoxication and euphoria, certainly much less than that seen with potent stimulant or with alcohol intoxication.

The sedative hypnotic class of drugs is made up of substances that work on the γ -aminobutyrate (GABA) receptor system of the brain. GABA neurons are cells that excite and activate the brain, leading to wakefulness and at times even anxiety. Sedative hypnotic substances (like alcohol, antianxiety, and sleep medications) tend to depress or quiet down GABA nerve cells, causing a relief of anxiety, sleepiness, and when used at too high a dose unconsciousness (passing out), coma, or even death. Similar to opioids, sedative-hypnotics have an indirect effect of stimulating the release of dopamine, and hence production of euphoria. Similar to potent stimulants, sedative-hypnotic substances in general, but

especially alcohol, tend to produce a high degree of judgment impairment as a consequence of overuse and intoxication. Thus, bizarre behavior contrary to the patient's up-bringing is commonplace with alcohol intoxication. These sedative hypnotics range from relatively weak substances like alcohol to very potent ones like the "date rape" drug rohypnol. An additional danger of sedative hypnotics is that they clearly increase in potency of effect when used in combination, markedly increasing the chances of serious overdose.

Hallucinogens are a diverse group of substances that alter perception as part of their central nervous system or brain effect. This group includes LSD, phencyclidine (PCP), marijuana, and many other naturally occurring hallucinogens contained in a variety of plants. Historically, the use of hallucinogens has been rare in the elderly. However, as the generation of people who came of age in America in the 1960s begins to approach old age, the prevalence of hallucinogen use—especially marijuana—will likely rise. Hallucinogens as a group, like the opioids, tend to produce a low degree of judgment impairment as a consequence of over use and intoxication. The altering of perception seems to include many different effects such as visual distortions, spatial distortions, and loss of time perception.

Euphoria-producing substances are primarily used for their ability to trigger a quick rise in dopamine, and thus an elevation in mood or euphoria. These same drugs have additional actions and effects that can generally be categorized into one of the above four classes.

The Continuum of Mood Altering Drug Use in the Elderly

Alcohol use, and to some extent other drug use, has been characterized as existing in our society as a gradual continuum. This continuum of levels of use is labeled as abstinence, low risk or casual use, risky use or "substance abuse," and chemical dependence or addiction. Definitions of each of these use levels are as follows:

Abstinence These people are nonusers of mood-altering drugs and do not use even in low risk amounts. The highest rate of abstinence in American adults is seen among older women. Up to 50% of women over the age of 70 are abstinent from all euphoria-producing substances; many of them have been abstinent for life. As a

consequence, the prevalence of addiction or chemical dependence is substantially lower in older women, as much as one third less than their elderly male counterparts. Besides older women, abstinence is prevalent among three other groups in society: those from one of the relatively fundamentalist religious faith communities, those with a strong family history of addiction who do not want to take the risk of activating the disease in themselves, and those individuals with the disease of addiction who are in recovery and thus abstinent.

The most important challenge in abstinence for those who are in recovery from addictive disease is to maintain complete abstinence from euphoria-producing drugs. Although there are very rare instances when a medication that is euphoria-producing must be prescribed, the long-term use of these medications is generally considered quite dangerous for persons in recovery and should be avoided. Three common reasons for relapsing back to addiction are (1) trying to go back and control one's use of the previously addicting drug, (2) trying to use euphoria-producing drugs other than the one that was the previous addicting drug, and (3) being prescribed euphoria-producing drugs on a long term basis and reactivating addiction.

Low Risk Use These people are low level intermittent users of mood altering drugs who do not binge, use only in socially acceptable situations, and have little, if any, evidence of health risk from their use. The Federal Government has published *Sensible Drinking Guidelines* for adult men and women, which provides clear information about what drinking levels are associated with no detectable health risks. These guidelines stipulate at least a 30% lower level of alcohol use for women than for their male counterparts, and indicate that safe levels of consumption for the elderly should be at least 50% lower than safe levels of consumption for non-elderly adults.

Low-risk use is generally a very stable pattern of use, only in social situations, and always keeping to within the sensible use guidelines referenced above. The prevalence of this low-risk substance use (primarily alcohol) in the elderly population is about 50–60%, with substantially higher rates among elderly men. This is due to the fact outlined above that elderly women have quite high rates of complete abstinence. True social users never have to try to limit their use, consciously construct rules around their use, cut back on their use because of an embarrassing situation, etc. Persons with addiction problems constantly try to become low risk “social”

users, by cutting back and trying to control their use. In reality, low risk users never have to think about controlling their use; it just happens unconsciously.

The use of non-alcohol, non-nicotine, nonprescribed euphoria-producing substances (i.e. illegal drugs) is quite rare among the elderly. Also, it is difficult to discuss low-risk use of drugs other than alcohol in American society where possession of other drugs is illegal and thus carries serious potential consequences. For the foreseeable future, possession of non-alcohol, non-nicotine euphoria-producing drugs will remain illegal in this country, and thus low-risk use is not a term that can be easily applied to their use.

Substance abuse Substance abusers are individuals who use more alcohol than is considered healthy or who use any amount of nonalcohol or nonprescribed euphoria-producing drugs. The use-patterns (quantity and frequency of use) of substance abusers tend to fall within their general peer group norm, and there are rare adverse consequences from the use. Substance abuse is use of euphoria-producing drugs to a moderate to severe level of intoxication, but consistent with peer group norms. It is generally thought that substance abuse is a behavior that many people participate in during late adolescence and early adulthood, that evolves either into low-risk use or addiction, and that is under a good deal of voluntary control. Consequently, the elderly are basically not involved in substance abuse or “risky use.”

Chemical dependence or addiction Chemical dependence or addiction is clearly a chronic disease of the brain and bears no relationship with morality, education, social class, or ethnicity. (For more information on addictive disease see “Addiction.”) It is a primarily genetic illness that clusters fairly heavily in families. Addiction is characterized by the repetitive, intermittent, loss of control over the use of a euphoria-producing drug, resulting in problems in a person’s life. As a consequence, addiction is generally not defined in terms of quantity and frequency of use, but rather in terms of patterns (loss of control) and consequences (repeated problems) of use.

The essential problem in addiction is this loss of control, and the resulting bizarre, uncharacteristic, erratic, or irresponsible behaviors. The societal costs of addictions are overwhelming. Over 70% of domestic violence, 70% of child abuse and 90% of childhood sexual abuse are thought to be addiction-related. In the

elderly, falls, progression of dementia, and incontinence are commonly associated with or worsened by addictive disease. The economic costs of addiction are estimated at 80–110 billion dollars per year, and addictions are considered the nation's number one health problem!

Related Topics

● Alcohol use, ● Depression, ● Substance use

Suggested Readings

- Council on Scientific Affairs, American Medical Association (1996) Alcoholism in the elderly. *JAMA* 275:797–801
Liberto JG, Oslin DW, Ruskin PE (1992) Alcoholism in older persons: A review of the literature. *Hosp Community Psychiatry* 43:975–984
Rigler SK (2000) Alcoholism in the elderly. *Am Fam Physician* 61(6):1710–1716

Suggested Resources

- <http://www.niaaa.nih.gov/>
<http://www.nida.nih.gov/>

Suicide

Deborah J. Gould

Suicide is one of the leading causes of death in the United States, with an incidence of 10.6 per 100,000 people. In 2000, almost 30,000 deaths in the United States were due to suicide, accounting for 1.2% of all deaths. Suicide was more frequent than homicide by a ratio of 5:3.

There are many factors that contribute to suicide. Some of the risk factors include male gender, age, substance abuse, a family history of suicide, poor social supports, medical illness, a history of previous suicide attempts, and history of abuse as a child. Most people who commit suicide have a psychiatric diagnosis such as depression, bipolar illness, or schizophrenia. In any given year, more than 18 million adults will experience some form of depression. Every year 12% of women

and 7% of men become depressed. The lifetime risk of developing depression is 20% for women.

Children and adolescents can also have depression. It has only been in recent years that depression in children has been acknowledged as being more than just a “phase” that the child or adolescent is going through. It is estimated that approximately 4% of adolescents become depressed annually. Suicide has become a major public health concern in this younger population. In 2000, the leading cause of death for 15–24 year olds was accidental injury followed by homicide and then suicide. Suicide was also the third leading cause of death for children aged 10–14.

On the other end of the age spectrum, older adults are disproportionately represented in the suicide statistics. In 2000, 13% of the US population was over the age of 65, but accounted for 18% of the suicides. The highest suicide rate is among males 85 years and older. In individuals aged 65 and above, the prevalence of a diagnosable depression is about 2%. Although depression is common in the older adult population, it should not be considered a normal part of aging. As in their younger counterparts, depression in the elderly requires treatment. It has been estimated that more than 75% of older adults who commit suicide have seen their primary care physician within a month of the suicide, and 40% have seen a physician within the week. This may be because older adults have a difficult time recognizing depression and often have physical rather than emotional symptoms. These physical symptoms are called “depressive equivalents.” Recognizing these symptoms as manifestations of depression can lead to timely diagnosis and initiation of appropriate treatment.

In all age groups, male gender is a major risk factor for suicide. Females attempt suicide three times as frequently as men, but the rate of suicide is four times greater for men. Men account for 81% of the suicides in people age 65 and above. For younger adults 20–24 years of age, the rate of suicide was seven times greater for men than it was for women.

Race also factors as a variable for the risk of suicide in the United States. In all age groups, African-American women have the lowest rate of suicide and white men have the highest. African-American males approach the rates for white males from ages 14 to 24, but then decline. For all age groups the rates for white-women are consistently higher than for African-American women and consistently lower than for African-American men.

The most common method of suicide is self-inflicted gunshot wound, accounting for 60% of all suicides. The presence of a firearm in the home has been found to be an independent risk factor for suicide in both sexes. In men the second leading means of suicide is hanging, and in women it is drug ingestion.

Depression, a risk factor for suicide, tends to run in families and the kind of depression that produces suicidal thoughts may also. The biology of depression is related to decreases in neurotransmitters in the brain, specifically serotonin and norepinephrine. New onset depression in later life may be related more to depletion of norepinephrine and may have a vascular origin. This type of depression may be an early symptom of dementia. The older antidepressants are called tricyclics and increase the availability of norepinephrine in the brain. Newer antidepressants called selective serotonin reuptake inhibitors (SSRIs) increase the amount of serotonin in the brain. There are also antidepressants that increase the levels of both norepinephrine and serotonin. A combination of antidepressants and psychotherapy is the most effective treatment for depression. However, recently there has been concern that the antidepressants that increase serotonin may increase suicidal thoughts, especially in children and adolescents. The Federal Drug Administration has recently issued warnings to this effect.

Suicide is a complicated problem with biological, psychological, and social factors contributing to its etiology. Research is currently being conducted to understand more fully the biological and genetic factors that may predispose to suicide. This knowledge will lead to improved medications. The psychological factors can often be addressed in psychotherapy. However, neither medication nor psychotherapy can be initiated until individuals at risk are identified and offered appropriate treatment. Knowing the social issues that contribute to suicide can help with evaluation and risk assessment. Substance abuse and depression can be treated simultaneously in programs called "dual diagnosis." The presence of cognitive decline in older adults can be ascertained earlier because of its probable relationship to depression. Social isolation, in part due to medical conditions, should be addressed in the older adult population and social services provided to establish good support systems. The research, treatment, and social changes required to have an impact on the suicide rate in the United States will require substantial financial investment in both the public and private sectors.

Related Topics

- Depression, ➤ Firearms, ➤ Mental illness, ➤ Mood disorders, ➤ Parasuicidal behavior, ➤ Psychotherapy, ➤ Substance use, ➤ Violence

Suggested Readings

Garlow SJ, Purselle D, Hening M (2005) Ethnic differences in patterns of suicide across the life cycle. Am J Psychiatry 162:319–323

Suggested Resources

- National Institute of Mental Health (NIMH) (2003) Older adults: Depression and suicide facts; <http://nimh.nih.gov/publicat/elderlydepsuicide.cfm>
- National Institute of Mental Health (NIMH) (Sept. 2005) In harms way: Suicide in America; <http://www.nimh.nih.gov/publicat/harmsway.cfm>

Survivor Benefits

Janet L. Lowder · Mary B. McKee · Lisa M. Montoni

Some people provide for their loved ones by purchasing private life insurance policies and designating family members as the beneficiaries to receive the proceeds of these policies after their death. Pre-need, prepaid funeral contracts are fast replacing what used to be called "burial insurance," a small, low-premium life insurance policy designed to cover the insured person's funeral costs. Social Security only provides a \$255.00 as a one-time lump-sum benefit to the surviving spouse (not the brother or the nondisabled adult daughter or the niece) of a deceased wage earner.

Social Security, as we know it, is essentially a wage-replacement program that provides monthly cash income benefits to workers and their families. Workers who leave the work force because of disability or retirement file their own "life claim" for benefits; the families of deceased workers file a "death claim" for benefits to sustain them in the wage earner's absence. The number of years a wage earner must work and earn credits for their family to be eligible for Social Security

survivors' benefits depends on how young the worker is at death. The younger a person is, the fewer years he or she needs to work (never more than ten, sometimes as few as one and a half) to provide a survivor's benefit for a spouse or children.

Surviving spouse benefits (sometimes called a "widow's or widower's pension") are payable to a surviving spouse, but only if over 60, or at least 50 and disabled within 7 years of the spouse's death. Anyone who is not already disabled and does not work or does not remarry for more than the 7-year period and then becomes disabled cannot draw on the deceased wage-earner's work record. Such an individual may at any time qualify for Supplemental Security Income (SSI) benefits that are means-tested (low income and assets) but not tied to any worker's Federal Insurance Contributions Act (FICA) contributions. Full surviving spouse benefits are available as early as age 65 (approaching age 67 for those born after 1939), but reduced surviving spouse benefits are first available to the nondisabled survivor at age 60.

Also eligible for benefits on the earnings record of a deceased worker (subject to a family maximum on a single worker's earnings record) are minor children (under age 18, up to age 19 if they are still in school, not college). This includes children who are born after the wage earner's death, provided they are his or, conceivably, hers. Under-60, nondisabled surviving spouses only draw benefits if they have a nondisabled child under 16 in their care (parents of disabled children and the over-16 disabled children themselves continue to draw survivor's benefits until the disabled adult child (DAC) begins to draw benefits in his or her own name at age 18). Once the child turns 17, the surviving minor child still draws benefits, but the parent is expected to earn a living or remarry someone who is working and can support them. Ex-spouses may be entitled to benefits as well, depending on the length of the marriage, when they remarried, their own age and disability, and other factors, including whether they are caring for a disabled child of the deceased wage-earner. Even a parent over 62 who was dependent on the wage earner may draw benefits to replace the wages on which they had relied before they lost their adult child.

In general, healthy, working-age surviving spouses without young children in their care do not receive any automatic cash benefit (or health insurance) when the wage-earner on whom they may have grown dependent leaves the workforce due to his or her death. The wage

earner's FICA contributions are not for naught, however, since the surviving spouse will be able to draw on that deceased worker's earnings record when the survivor turns 60 (with certain exceptions among those who remarry). Generally, remarriage before age 60 will cut off your right to draw on your deceased spouse's work record. For those fortunate enough to remarry later in life, after age 60 (or 50 if disabled), they can bring their survivor's benefit with them to the marriage.

Do Social Security survivor benefits really replace the lost wages of the deceased worker? No, even considering that worker is no longer in the household eating, consuming utilities, dressing and driving to work so there are technically fewer people in the household needing support. The principal insured amount (PIA) is designed to reward those who contribute to the system, but it is never more profitable or financially better for the family for the worker to die or become disabled. Yet for many, even those who do carry some private life insurance, the Social Security survivor benefit is the greatest financial legacy they leave.

Related Topics

Social Security

Suggested Resources

Cornell University Law School's Legal Information Institute Social Security Library; www.law.cornell.edu/socsec

National Senior Citizens Law Center; www.nsclc.org

Social Security Online, Widows, Widowers, & Other Survivors (18 November 2005) <http://www.ssa.gov/ww&os2.htm>

"Survivors Benefits" SSA Publication No. 05-10084 (May 2004)
Social Security Administration

Systemic Lupus Erythematosus

Lori B. Siegel

Systemic lupus erythematosus (SLE) is a multisystem autoimmune disease that presents with a wide variety of clinical manifestations. The main immunologic defect is the production of antibodies to one's own self. The

immune system sees the normal human-proteins as foreign and attacks them causing inflammation and tissue destruction. The main organs involved are the joints, skin, kidneys, lungs, heart, and nervous system. SLE is primarily a condition in women during the childbearing years and is greatly influenced by estrogen and hormonal fluctuations.

Traditional SLE may be present in a variety of ways in a spectrum of severity. The clinical features often include fever, fatigue, and weight loss. The skin may have an associated rash, there may be pain in the chest as the lining of the lungs and heart become inflamed, and the joints may swell. A careful investigation may also find kidney involvement. The brain and peripheral nerves may be involved in a variety of ways as well. Laboratory investigations may reveal an immune-mediated anemia, low white-cell, and platelet counts. Special tests called antinuclear antibody titers (ANA) may also help identify that the patient has antibodies to their own proteins. Specific ANA types may be seen, which help predict organ involvement and prognosis.

The SLE in the elderly is quite rare but does exist. It may be due to a reaction to a medication, which primes the immune system to develop autoantibodies. Drug-induced SLE may be associated with any medication but is classically associated with cardiac arrhythmia medications (procainamide), anti-thyroid medications (propylthiouracil), antiseizure medications (phenytoin), and some antihypertensive medications (hydralazine). The cases of drug-induced SLE are usually milder and do not have major organ involvement and are not associated with tissue damage. These patients may experience arthritis, fatigue, and some chest pain due to inflammation of the lining of the heart and lungs. These symptoms may develop shortly after a medication has been started or it may occur months later.

A clue to determining whether the patient has developed drug-induced SLE is to check the ANA. It may be positive but in a homogeneous pattern, which shows that the cells when examined in the microscope light up completely in no specific pattern. The finding of antihistone antibodies and antibodies to single-stranded DNA is classic. The treatment is to stop the medication and treat the patient symptomatically with analgesics and nonsteroidal anti-inflammatory medications. Unfortunately, the ANA may remain positive for a long period of time. The patient should be educated that if their ANA is tested in the future, and it is likely to be positive; this finding will not be new and

will just reflect the previous drug exposure. A continuously positive ANA does not mean that the person has developed classic SLE.

There are a small percentage of people who develop SLE later in life but it is rare. Fortunately, it is mild and the diagnosis is usually based only on a positive ANA with some arthritis. Any individual, past childbearing years, who develops a positive ANA, should be evaluated for underlying infection or malignancy. The ANAs may also be positive in people who have no disease or those with TB and viral illnesses.

The treatment of SLE focuses on the symptoms. Nonsteroidal anti-inflammatory medications are used for arthritis and mild chest pain due to inflammation of the heart and lung lining. Hydroxychloroquine may be used for fatigue and skin disease. Other disease-modifying medications are used for more refractory conditions. In SLE of the elderly and drug-induced SLE, such advanced measures are usually not necessary and the side effects of these medications may have more devastating effects in this population.

Corticosteroid use should be reserved for life threatening or major organ system involvement of SLE. The side effects are significant and may seriously harm an older individual with other medical problems. Corticosteroids may exacerbate hypertension, cause glaucoma, accelerate and worsen atherosclerotic disease, alter lipids, and upset glucose control causing diabetes. They may also accelerate bone loss and increase skin fragility. They predispose people to infection and may cause psychosis, depression, and mania. All of these conditions may already be present in the older population and by adding this medication incorrectly or unnecessarily causes grave harm. It must be remembered that the SLE in the elderly population is usually mild, whether idiopathic or drug induced, and treating the symptoms is all that is usually needed. Good communication and the careful use of laboratory tests will help identify the correct diagnosis.

Related Topics

- Autoimmune disease disorders, • Rheumatoid arthritis